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HEARINGS

BEFORE THE

COMMITTEE ON INTERSTATE AND FOREIGN COMMERCE

269
178

OF THE

U.S. HOUSE OF REPRESENTATIVES

ON

H. R. 19795

TO PROMOTE THE SAFETY OF
EMPLOYEES UPON RAILROADS

ASH PAN BILL



WASHINGTON
GOVERNMENT PRINTING OFFICE

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SAFETY OF EMPLOYEES UPON RAILROADS.

COMMITTEE ON INTERSTATE AND FOREIGN COMMERCE,
HOUSE OF REPRESENTATIVES,
Friday, May 8, 1908.

The committee met at 2.30 o'clock p. m., Hon. James S. Sherman presiding.

Present, also, Mr. H. R. Fuller, representing the Brotherhood of Locomotive Engineers, the Brotherhood of Locomotive Firemen and Enginemen, and the Brotherhood of Railroad Trainmen; Mr. S. C. Neale, representing the Pennsylvania Railroad lines, with whom appeared four practical men employed by the Pennsylvania Railroad; Hon. L. E. Payson, representing the Harriman roads, the Southern Pacific lines; Hon. Charles J. Faulkner, representing the Southern Railroad, the Atlantic Coast Line, the Santa Fe, and others; Mr. Charles C. Paulding, representing the New York Central lines.

The committee then proceeded to the consideration of the bill (H. R. 19795) to promote the safety of employees upon railroads.

STATEMENT OF HON. JOSEPH V. GRAFF, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF ILLINOIS.

Mr. GRAFF. I am likely to be called out before this hearing concludes this afternoon, and I would like to make a brief statement before Mr. Fuller commences.

Mr. SHERMAN. You introduced the bill?

Mr. GRAFF. Yes, sir.

Mr. SHERMAN. That is entirely proper. You may be heard now, Mr. Graff, if you please.

Mr. GRAFF. Mr. Chairman, I introduced this bill at the request of Mr. J. J. Hannahan, head of the Brotherhood of Locomotive Firemen of the United States and Canada, who lives at Peoria, Ill., in my district, that organization having its headquarters in my home city, and the bill is drafted after present legislation regarding air brakes.

Mr. SHERMAN. Safety appliances generally?

Mr. GRAFF. Yes, sir; but the penalties in this bill are heavier than the penalties in existing law, the representatives of the organization claiming that it was necessary to have them so in order to have satisfactory and real enforcement of the measure. At the time of the introduction of the bill there was inserted section 5, which provides:

SEC. 5. That any employee of any such common carrier who may be injured or killed by any locomotive in use contrary to any of the provisions of this act shall not be deemed thereby to have assumed the risk thereby occasioned, although continuing in the employment of such carrier after the unlawful use of such locomotive had been brought to his knowledge, nor shall such employee be held to have been guilty of contributory negligence in any case where such carrier shall have violated any provision of this act when such violation contributed to the injury or death of such employee.

That section, of course, was inserted at the time when the present and recently enacted provision of law with reference to personal injury recoveries of employees against common carrier railroads existed, and it occurred to me since that possibly that section would not be needed, as the present law would cover the case. There might be some question as to whether this section might not cover a class of employees which were not covered entirely by the present law.

I was informed, when I asked the gentleman who consulted me about the introduction of this bill, that there were several of the railroads of the country which had in successful operation a number of devices which would comply with the provisions of this act, and, furthermore, that the most of these devices were simple in construction and comparatively inexpensive, and were not covered by any patents. Naturally enough, I inquired about whether this bill would be only complied with by putting in some particular device covered by some patent which was held by some individual or corporation. I was also informed that during the past year there had been something like 133 firemen who had been injured, some of them killed, by being compelled in their work to get beneath the engines for the purpose of cleaning and emptying the ash pans.

Naturally, I had depended for my information for the necessity of this legislation and for the facts connected with it upon the representatives of the organization, of this body of men who were back of this measure, but in a general way I might say that I am decidedly in favor of any measure to be enacted within reason which is calculated to lessen the dangers of this hazardous business, and that I think the public itself are quite willing to bear the additional expense which is imposed upon the railroads in the first instance by the installation and operation of any of these safety devices, and it is of course quite apparent that the railroads themselves are not going to take the initiative with regard to these matters, and that State legislation upon these lines is futile, and I felt that I was very glad to have the opportunity and the honor of introducing a measure of this kind in line with legislation on the statute books which has proven not burdensome upon the railroad companies but advantageous to them and to the employees of the railroads, and neither the railroads nor the employees to-day would wish that legislation repealed.

STATEMENT OF MR. H. R. FULLER, REPRESENTING THE BROTHERHOOD OF LOCOMOTIVE ENGINEERS, BROTHERHOOD OF LOCOMOTIVE FIREMEN AND ENGINEMEN, AND THE BROTHERHOOD OF RAILROAD TRAINMEN.

Mr. FULLER. Mr. Chairman and members of the committee, Mr. Graff has stated the object of the bill; I think it is apparent on the face of it. I appear here in behalf of the organizations which I have named, and especially in the interest of the members of the Brotherhood of Locomotive Firemen and Enginemen, as they are the most directly affected by this question.

The purpose of this bill, gentlemen, is simply to require the railroads to equip their locomotives which they use in hauling interstate and foreign commerce and those in the Territories and the District of Columbia with ash pans which can be cleaned and dumped without

the necessity of men going underneath the locomotives for that purpose. That is the object and purpose of the bill, and the reason for it is that men are being killed and injured by the hundreds as a result of going under locomotives for that purpose. The construction of the modern locomotive, or many of them, is so compact that a man in order to get under one of them has in some instances to get in sideways; he can not lie down flat and crawl under.

The policy of the railroads is to get all they can out of their locomotives. They put all the tonnage behind a locomotive it is possible for it to haul. Necessarily the locomotive has to be fed to the fullest extent with fuel to furnish the power with which to draw those heavy loads. As a result of that this condition has arisen, something which did not exist in days gone by, that men are frequently compelled to clean ash pans out on the road between terminals, where formerly the loads were light as compared with the capacity of the engine, and that was not necessary; they were then cleaned in pits, or over pits, where men got down in pits, and there was not nearly so much danger.

It is a horrible thing to think of a man edging his way in between the wheels of a locomotive on the main track, and they sometimes have to do it, because occasion arises where they have to clean their ash pans on the main track. If the locomotive moves while he is in that position he has no show whatever; if the engine moves a foot he is gone. The attachments to the locomotive are many, nowadays. While they are building the fire boxes higher than they used to, in many cases there is very little room under there after a man does get under, and he has to lie down, or get down on his knees and scrape the ashes out of the pan, and when an engine moves he has no show. I have letters here from men who have had the experience of being dragged for car lengths, others telling of other cases, of members of their lodges who have been killed in that way; trains have started off, and they have cut the air hose to apply the brakes—you understand, to cut the air hose stops the train automatically—they do this to save themselves.

It has been said, and will probably be said here, that somebody is negligent if an engine moves while a man is under it. That may in some instances be true, but the fact that a man has to get under there and perform that service remains, and if that necessity were removed, then he could not even be injured in that way through negligence.

They are often injured in this way: A train will pull in on the side-track to meet another one; the room on the siding is scarce; there is another train to come in behind them; the first train stops, and the fireman wants to clean his ash pan; when their train stops he gets down underneath, and another train comes in behind them, moving up as close as they can; they bump up against this train and move it, and the fireman is injured or killed. A train may come up to a stopping place; they may have switching to do, and the fireman may get down underneath to clean the ash pan, and there may be an understanding between him and the engineer; a brakeman comes over, knows nothing about it, and he uncouples the engine from the train and tells the engineer to go ahead, and gives him a signal to go ahead, and, by force of habit—he is used to hearing that voice and is used to getting that signal—for the instant he

forgets his fireman, and moves the engine but a few feet when it comes back to him that his fireman is underneath, but it is then too late. The fireman is either killed or injured.

Mr. ESCH. Are not cabs so constructed that the engineer can not always see the fireman on his side of the cab?

Mr. FULLER. Yes, sir; there are a number of engines where the engineer and fireman are entirely out of sight of each other when they are in the cab, but when a fireman gets under the engine, if the engineer is there, there is generally an understanding, or there should be. There are cases where men have been under the engine and knew that the engineer was going to start and attempt to get out, and they have their hands cut off and their arms cut off; maybe they will get their bodies out and they will get a leg cut off; maybe they get their legs nearly out and have a foot cut off. I have here a number of resolutions from the lodges of the Brotherhood of Locomotive Firemen and Enginemen, in which they ask for this legislation, and give their reasons. I will not take the time to read them. I have one here that was passed by a union meeting of the Brotherhood of Locomotive Firemen and Enginemen, held in this city on March 30 of the present year, and there were 30 States represented at that meeting. I will just read the resolution:

WASHINGTON, D. C., *March 31, 1908.*

SIR: The undersigned, a committee representing a union meeting composed of 1,000 delegates representing the Brotherhood of Locomotive Firemen and Enginemen from 30 States, held at Masonic Temple, Washington, D. C., March 30, 1908, respectfully submit for the consideration of the Senate the following memorial adopted by said meeting:

"Resolved, That we favor the early consideration and passage by Congress of the Hemenway-Graff bill, requiring common carriers to equip their locomotives with automatic self-dumping ash pans, thereby doing away with the necessity of men exposing themselves to danger by being compelled to go under locomotives."

Respectfully submitted.

JOHN M. HALL,
WILLIAM A. CAHOON,
Committee.

HON. CHARLES W. FAIRBANKS,
President of the Senate, Washington, D. C.

I have here a number of letters. They are principally from the secretaries of the lodges of the locomotive firemen in response to a circular sent out by Mr. Hannahan, the grand master of that organization, asking for information as to accidents and the practices of those roads, and unless the committee desires to hear them, I will not read them.

Following are the resolutions referred to:

BROTHERHOOD OF LOCOMOTIVE FIREMEN,
INDUSTRIAL LODGE, No. 21,
St. Louis, Mo., April 15, 1908.

RESOLUTIONS.

Whereas in very many instances, while in the performance of a compulsory duty of cleaning the ash pan, the fireman has been terribly maimed and in some instances killed, and as a relief from the performance of such a dangerous duty House bill known as H. R. 19795 (Senate bill known as S. 6320) has been introduced: Therefore be it

Resolved, That it is the sense of this body that we heartily indorse and recommend the passage of House bill known as H. R. 19795; that we earnestly and urgently request our representatives in the United States Senate and House of Representatives for humanity's sake to support, work, and vote for the passage of House bill 19795; that

a copy of these resolutions be forwarded to each of our representatives in the Senate and House of Representatives, also a copy sent to H. R. Fuller, our legislative representative at Washington, D. C.

Adopted.

[SEAL.]

Attest:

WM. A. MURPHY, *Master*.

R. E. MCKENZIE, *Secretary, No. 21.*

To our SENATORS.

CACTUS LODGE, No. 94, B. OF L. F. AND E.,
Tucson, Ariz., April 15, 1908.

HON. H. R. FULLER, *Beaver Falls, Pa.*

DEAR SIR: I submit the following resolution by Cactus Lodge, No. 94, B. of L. F. and E.:

Be it resolved, That we do heartily indorse proposed legislation entitled "A bill to promote the safety of employees upon railroads," and having for its object the compulsory equipment of all locomotives in interstate or foreign commerce with automatic self-dumping and self-cleaning ash pans; and we furthermore do most earnestly urge the passage of this bill.

Yours, respectfully,

J. L. ABELL,
Secretary Lodge No. 94.

PUEBLO, COLO., *April 13, 1908.*

MR. H. R. FULLER,
Hotel Ventosa, Washington, D. C.

DEAR SIR AND BROTHER: At a regular meeting of Royal Gorge Lodge, No. 59, Brotherhood of Locomotive Firemen and Enginemen, Pueblo, Colo., the following resolution was unanimously indorsed and the proper officers of the lodge instructed to write Colorado's Senators and Representatives in Congress respectfully requesting them to support and use their best efforts to secure the enactment of the measure referred to in the resolution:

Resolved, That the membership of this lodge heartily indorse a bill now pending before the Congress of the United States requiring interstate railways to equip their locomotives with automatic self-dumping and self-cleaning ash pans. We believe such a measure will entirely eliminate the great danger to enginemen of getting beneath the complicated mechanism of modern locomotives and obviate terrible accidents from this source, and we therefore respectfully urge Colorado's delegation in the National Congress to give said measure their approval and support.

Respectfully,

[SEAL.]

Attest:

E. W. WELLS, *Secretary.*

M. P. McMILLIN, *Master.*

CUMBERLAND, MD., *April 6, 1908.*

BROTHER H. R. FULLER: You are hereby requested by the members of Fairfax Rock Lodge, 701, of the B. of L. F. and E. to urge the immediate passing of the bill requiring all railway companies to equip engines with an automatic self-dumping and self-cleaning ash pans. Hoping you will do all in your power to better the conditions of our locomotives, we remain,

Yours, fraternally,

G. W. EARNEST, *Secretary.*
C. E. BURKEY, *Master.*

BROTHERHOOD OF LOCOMOTIVE FIREMEN AND ENGINEMEN,
MACKINAW LODGE, No. 458,
Van Wert, Ohio, April 6, 1908.

MR. H. R. FULLER, *Washington, D. C.*

DEAR SIR AND BROTHER: I have been asked by the members of Lodge 458, B. of L. F. and E., to write to you and to ask you to do all you can for the passage of Senate bill, known as S. 6320, and House bill, known as H. R. 19795, for we think it is very dangerous to have to go under an engine for the purpose to remove ashes from ash pan.

I have written Congressman T. T. Ansberry concerning same.

Fraternally, yours,

[SEAL.]

F. A. DERNINT,
Secretary No. 458, 321 Fulton Street, Van Wert, Ohio.

SAFETY OF RAILROAD EMPLOYEES—ASH PAN BILL.

BROTHERHOOD OF LOCOMOTIVE FIREMEN AND ENGINEMEN,
SCHUYLKILL VALLEY LODGE, No. 730,
Bridgeport, Pa., April 5, 1908.

Mr. H. R. FULLER,

Legislative Representative, Washington, D. C.

DEAR SIR AND BROTHER: In regard to safety appliances on engines we are very badly in need of automatic ash pans, because we have to crawl under the engine, clean them out, and if engine makes a move while we are under these we are a dead one.

Yours, fraternally,

C. W. WEIDNER, *Master.*
F. S. KIRKMAN, *Secretary.*

BROTHERHOOD OF LOCOMOTIVE FIREMEN AND ENGINEMEN,
CONSTANT LODGE, No. 398,
Olean, N. Y., April 5, 1908.

Mr. H. R. FULLER,

Legislative Representative.

DEAR SIR AND BROTHER: It is the desire of this lodge to urge the passage of the bill requiring all railroad companies to equip all engines with automatic self-dumping and self-cleaning ash pans, and this lodge further urges you to immediate action.

Fraternally, yours,

G. F. STARR, *Secretary.*

BROTHERHOOD OF LOCOMOTIVE FIREMEN,
J. F. BINGHAM LODGE No. 155,
New York, April 8, 1908.

To whom it may concern:

GENTLEMEN: The members of above-named lodge in meeting assembled have unanimously indorsed bill H. R. 19795, introduced by Congressman Graff, providing for automatic ash pans on engines, and do most respectfully urge of you to give this bill your favorable consideration.

Yours, respectfully,

[SEAL.]

WM. F. HILMS, *Master.*

EDWIN R. WELLS, *Secretary,*

123 West One hundred and thirty-seventh street, New York City.

BELLEFONTAINE, OHIO, April 8, 1908.

Mr. H. R. FULLER.

DEAR SIR AND BROTHER: At a regular meeting of the B. of L. F. and E. it was unanimously decided that we as a body call on or ask you as Ohio legislative representative to do all in your power toward the passage of what is known as the ash-pan bill.

I am, yours, fraternally,

[SEAL.]

F. H. LUTZ,
Secretary Lodge No. 527.

BROTHERHOOD OF LOCOMOTIVE FIREMEN AND ENGINEMEN,
TRIED AND TRUE LODGE No. 361,
Washington, Ind., April 15, 1908.

Hon. H. R. FULLER,

Washington, D. C.

DEAR SIR: It has been ordered by Lodge 361, B. of L., F. and E. to request Congressmen and legislative representative to urge the passage of bills, Senate 6320, introduced on March 24, 1908, and House bill H. R. 19795, introduced on March 24, 1908, by Congressman Graff, of Illinois.

Yours, fraternally,

E. C. LOUGH, *Master.*

Mr. PAYSON. Would it take much of your time if you would give some specific instances and the names of the roads where the accidents occurred?

Mr. FULLER. Yes, sir; I will be glad to, Mr. Payson. Here is a case of a fireman who was injured a good many years ago. He is now an inmate of the home for disabled railroad employees at Highland Park, Ill., and this letter is written by the keeper of the home.

Mr. PAYSON. I do not mean the whole letter, but just the road on which it occurred and the details of the accident. Mr. Chairman, my reason for making this inquiry and thinking that the committee ought to hear it is this: As you know, the Harriman lines of road constitute something like 23,000 miles. I have telegrams in my pocket and letters from the people at the head of the operative department, and they say unanimously that they never heard of an accident of this character occurring on the lines of the road, and since the destruction of the records in San Francisco, where the records are all kept, they have been running down the records, and they can not find an instance where an accident occurred. I had a long conversation yesterday with one of the men connected with the Northern Pacific road, and he says he never heard of an accident of this kind occurring by reason of the nonuser—

Mr. SHERMAN. Mr. Payson, you will have an opportunity to get at that in your own way, and ordinarily we do not let witnesses before the committee stand for an interruption from an outsider.

Mr. PAYSON. No; but, Mr. Chairman, you remember I asked the question.

Mr. SHERMAN. I understand that.

Mr. FULLER. I want to say, in reply to that now, that considering the number of employees, the miles of road, and the number of locomotives that the interests which Judge Payson represents control and operate, I think their facilities for keeping track of accidents are not very good—

Mr. PAYSON. Perhaps so.

Mr. FULLER (continuing). If that is the case, and I have no reason to believe that the gentleman has not stated it just as he heard it. This does not state the road, but I will give you the details.

Mr. PAYSON. I do not care if it does not state the road.

Mr. FULLER. I will read it for the benefit of the committee. [Reading:]

HIGHLAND PARK, ILL., April 11, 1908.

Mr. H. R. FULLER,
The Ventosa, Washington, D. C.

DEAR SIR AND BROTHER: By request of John Hannahan, grand master Brotherhood of Locomotive Firemen and Enginemen, we are sending you under separate cover photograph of Brother Joseph J. Belaire, member of Lodge No. 26, Brotherhood of Locomotive Firemen and Enginemen, who was injured February 7, 1883, while hoeing out the ash pan of his engine. It appears that they stopped on the main track to meet another train, and while there Brother Belaire crawled under the engine to hoe out the ash pan; the head brakeman came along, pulled the pin behind the engine, and called to the engineer to go ahead; the engineer, forgetting that his fireman was under the engine, started to pull out; then the fireman made an attempt to crawl from under, but got no farther than his two hands on the rail, and although the engine only moved about 5 feet it was enough to cut his hands off.

There is a photograph of the man with both hands practically cut off, and it seems a great pity that a man of the ingenuity and the ability of this man should be disabled in that way. Since he has been disabled, this photograph shows no less, I guess, than 15 or 20

types of engines that will take steam and work that that man has constructed with practically one finger.

Mr. ESCH. Has there been any change for better or worse since 1883?

Mr. FULLER. Oh, yes.

Mr. WANGER. Which way?

Mr. FULLER. For the better.

Mr. WANGER. Right there, that we may understand it better, where does the fireman usually get in to operate? Is it between the wheels of the engine or between the engine and the tender?

Mr. FULLER. It is a question of where he can draw the ashes from. Some locomotives are so constructed that they can not all be drawn from the rear of the fire box, and he has to crawl in under the boiler in front of the fire box.

Mr. WANGER. Do some engines have double ash pans?

Mr. FULLER. Yes, sir; they do.

Mr. WANGER. And the ashes must be withdrawn in each direction?

Mr. FULLER. Yes, sir. In many cases the ash pan can be reached more conveniently from the rear, but in some cases it can not be reached any easier there. But it matters not where he gets in under, he is always cramped for room and he can not be in a natural position; the space is small, and when the engine once starts for him to get his feet and get started, you can realize what a difficult matter it is. The space is too small at best.

Here is another letter:

BEAUMONT, TEX., April 29, 1908.

Mr. J. J. HANNAHAN,
G. M. B. of L. F. and E., Chicago, Ill.

DEAR SIR AND BROTHER: One case of which we learned was that of a fireman by name of Reeves, killed at Orange, Tex., in year of 1900. He was cleaning ash pan on switch engine which he was firing and in some way engine was moved and ran over him, injuring him so that he only lived a short while.

We could get no more accurate information than the above concerning this case.

On the night of February 18, 1904, John Kenny, a fireman in service of T. and N. O. Rwy., but on account of slack business being temporarily employed as engine watchman at the time, while cleaning ash pan on S. P. engine No. 640, at Woodville, Tex., was scalded to death account of blow-off pipe blowing out of boiler.

In March, 1903, while firing an engine on K. C. S. Rwy., I was cleaning ash pan on engine at Jansen, Ark., when another train backed into one on which I was firing, shoving the engine on which I was cleaning ash pan, and dragging me about 60 feet, and I escaped injury only by the fact that it was a class of engine on which the ash pan could be cleaned from the back end, and I was under the back end of the engine instead of the front end; in this case it would have been an impossibility for me to have escaped injury.

Mr. FULLER (continuing). I think the S. P. is one of the Harri-man lines. With the permission of the committee I will insert these other letters, without reading, as a part of my statement.

Mr. SHERMAN. Certainly; that is all right.

TRIUMPHANT LODGE, No. 47,
Chicago, Ill., April 11, 1908.

J. J. HANNAHAN, G. M., Peoria, Ill.

DEAR SIR AND BROTHER: In reply to your letter asking for information about the number of firemen injured while cleaning ash pans, I will give you what I can. The letter was read before the lodge on April 7, but we have been quite fortunate in that respect.

One case known of; it happened at Gilman, Ill., about three years ago; maybe it was four. I can not give any names, as I have forgotten them. The train was coming

north and stopped at Gilman; the fireman was underneath cleaning ash pan; another train following ran into them; the fireman was killed, I believe. It was foggy and engineer's excuse was that he did not know where he was.

Another case mentioned was where a fireman was cleaning ash pan and engineer moved the engine and then remembered his fireman. He found him under the first car pretty well mauled but ready to fight when they got him out. He was badly bruised.

VAN WERT, OHIO, *April 5, 1908.*

Mr. J. J. HANNAHAN,
Grand Master, Peoria, Ill.

DEAR SIR AND BROTHER: In answer to your query of April 1 will say that there has been no fireman seriously injured by going under an engine to clean out an ash pan. There was a fireman received slight injuries caused by his going in under engine to clean out ash pan. This fireman lost eight weeks' work on account of his injuries. But there have been many cases where firemen have had very close calls for their lives; some have been dragged from one to five car lengths while in under engine cleaning ash pan, caused by some one starting engine or by throttle leaking on engine and admitting enough steam into cylinder to start engine; some of these firemen have saved themselves by cutting the air hose between engine and tank, as very near all of the engines on this road are so built that a fireman can get under them at this point much easier and have more room to do the work in. And also there have been cases where another train has run up against a train while it was standing still and moving same for a distance of four or five car lengths while fireman was under engine cleaning ash pan. These firemen save themselves by hanging to safety chain brake beam. And, as stated above, several times by engineman stopping engine and train.

MARGUERITE LODGE, No. 450,
St. Paul, Minn., April 30, 1908.

Mr. JNO. J. HANNAHAN, *Peoria, Ill.*

DEAR SIR AND BROTHER: One of our members, George C. Wiley, was cleaning ash pan and had his left leg caught by the front driver; four days later the leg was amputated above the knee. The accident occurred the 13th day of April, and the amputation was made the 17th of April, 1908. I have understood indirectly that the accident was caused by a leaky throttle.

AVONDALE, ALA., *April 12, 1908.*

Mr. J. J. HANNAHAN, *Peoria, Ill.*

DEAR SIR AND BROTHER: Your circular of the 1st instant and official circular No. 24 received. In reply will say that action has been taken in this matter by this lodge, and the only information at hand relative to injuries received by firemen while cleaning ash pans is as follows:

W. T. Bell, fireman on the Southern Railway, and a member of Lodge 426, was killed while cleaning ash pan near Columbus, Miss., on November 28, 1906.

ARGENTA, ARK., *April 12, 1908.*

Mr. J. J. HANNAHAN, *Peoria, Ill.*

DEAR SIR AND BROTHER: As per your request, I herewith hand you the names of a couple of firemen who were injured while cleaning ash pans on locomotives: Mr. Ruben Plant, Argenta, Ark.; Mr. John Herndon, Argenta, Ark.

Both men were scalded by the blow-off cock flying open while they were under the engine. Mr. Plant was severely scalded, he being blown out from under his engine.

COLTER, ARK., *April 15, 1908.*

Mr. J. J. HANNAHAN, Esq., *Peoria, Ill.*

DEAR SIR AND BROTHER: Yours of April 1 received a few days ago; will say circular No. 24 was taken up at our meeting. We find one brother, George Martin, got scalded on left leg while cleaning pans last July.

WILMINGTON, DEL., *April 9, 1908.*

Mr. J. J. HANNAHAN,
Grand Master, B. of L. F. and E., Peoria, Ill.:

DEAR SIR AND BROTHER: In reply to your communication of the 1st instant, would say we had one member of this lodge, Martin Connor, killed while cleaning out the ash pan in August, 1901.

AUGUSTA, GA., *April 19, 1908.*

Mr. W. S. CARTER,
G. S. and T., Peoria, Ill.:

DEAR SIR AND BROTHER: I inclose information in regard to men being hurt while cleaning ash pans. W. W. Moody, loss of one leg; Brother W. C. Hancock, dragged six car lengths and hip hurt; Brother M. Grey was knocked against leg of boiler by lightning; Brother O. T. Adams was dragged two car lengths, shoulder hurt; Joe Vandyke, dragged one car length by leaking throttle.

MACON, GA., *April 15 1908.*

Mr. J. J. HANNAHAN,
Grand Master, Peoria, Ill.

DEAR SIR AND BROTHER: Your letter of April 1 was read before the lodge at our meeting on April 12, and the members were very much in favor of getting this bill passed, as the greatest drawback we have is cleaning ash pans. I also learned that there had been one white fireman injured on G. S. and F. R. R., two colored firemen injured on C. of G. R. R., and one colored fireman injured on M. D. and S. R. R. within the last four months.

DUBUQUE, IOWA, *April 8, 1908.*

Mr. J. J. HANNAHAN, Esq., *Peoria, Ill.*

SIR AND BROTHER: In regard to your circular No. 24, would state that Brother Jesse Parnell was injured by assisting the fireman in cleaning the ash pan, necessitating the amputation of the arm.

Another brother fireman was dragged four blocks under the engine while cleaning the pan, engineer forgetting he was under the engine, but escaped uninjured. Another member dragged two blocks, same case as second.

LOUISVILLE, KY., *April 21, 1908.*

Mr. J. J. HANNAHAN, *Peoria, Ill.*

DEAR BROTHER HANNAHAN: Yours of recent date to hand, and in reply I beg to say that John Morrison, then a helper and general utility man, but now a fireman out of Cecelia, Ky., was ruptured by being dragged while under a passenger engine cleaning the pan at Cecelia, Ky.

Engineer claimed leaky throttle, but other evidence showed he forgot the man under the engine and started.

MARQUETTE, MICH., *April 14, 1908.*

Mr. J. J. HANNAHAN,
Grand Master B. of L. F. and E., Peoria, Ill.

DEAR SIR AND BROTHER: Your letter of April 1 received and presented at our last regular meeting on April 5, when the matter was discussed, and the sentiment expressed was that it would be a boon to the locomotive firemen not so much for the reason that it would lighten his work, but on account of the risks a fireman incurs every time he goes beneath an engine to clean ash pans.

There have been several accidents on this road, viz, the Duluth, South Shore and Atlantic, to my knowledge; one a number of years ago, when a member of this lodge, Charles Stack, was underneath cleaning his pans, the engineer moved the engine and severed one of his legs below the knee. More recently was a fireman, Thomas Daly, caught beneath the engine, and the end of the brake rod protruding several inches

through the wooden brake beam on the tender entered the lower part of the body and tore him badly, so that for a time his life was despaired of, and although he eventually recovered he was laid up for months and suffered fearfully. Also another case similar to this one occurred within the past two months, although the fireman was not injured quite so badly. It seems too bad that we must continue to take a chance on our lives to do something that isn't necessary, but is merely to some railroad companies a matter of dollars and cents.

I could give you minor instances one after another of narrow escapes and slight bruises and cuts received in this manner, owing to engines being moved while firemen were cleaning ash pans, leaky throttles, other trains or engines backing into them, etc., but don't suppose it is necessary.

SAGINAW, MICH., *April 17, 1908.*

Mr. J. J. HANNAHAN, *Peoria, Ill.*

DEAR SIR AND BROTHER: Referring to your letter of April 1 in regard to automatic cleaning ash pans, there was one fireman got dragged over the fire he had hoed out of the pan and had his arm burned so bad he was in the hospital. And there have been several cases where firemen have been dragged some distance, but through good luck escaped injury. We think here that an automatic ash-pan cleaner is a safety appliance needed very bad.

MERIDIAN, MISS., *April 17, 1908.*

Mr. W. S. CARTER,
G. S. and T., Peoria, Ill.

DEAR SIR AND BROTHER: I can cite you to a case where a hostler helper by the name of Ed. Dearman was killed and a colored helper was injured at this place while cleaning ash pans under Southern engine on their main line on September 6.

ST. LOUIS, MO., *April 15, 1908.*

Mr. J. J. HANNAHAN,
Grand Master, Peoria, Ill.

DEAR SIR AND BROTHER: Wm. Lutz, a member of Industrial Lodge, No. 21, on May 27, 1902, in the service of the Terminal Railroad Association of St. Louis, lost his legs while cleaning the ash pan.

Brother Lutz was firing engine on dirt train on May 27, 1902, and while train was unloading he cleaned his fire and got under the engine to clean ash pan; after cleaning the pan he was getting from under the engine; the engine was started.

THAYER, MO., *April 8, 1908.*

Mr. J. J. HANNAHAN,
Grand Master, Peoria, Ill.

DEAR SIR AND BROTHER: In answer to your letter of April 1 inclosing circular No. 24, will give you what information I can on the division between Thayer, Mo., and Memphis, Tenn., on the St. L. and S. F. R. R. In the last four years there has been one fireman killed and one had his shoe heel torn off, and would have been killed if the brakeman had not called him from under the engine while cleaning pans at Hardy, Ark. Causes in both cases by tail-end collisions. There have been several cases of the firemen being dragged under the engine for 15 or 20 feet.

WATERTOWN, N. Y., *April 7, 1908.*

Mr. J. J. HANNAHAN, *Peoria, Ill.*

DEAR SIR AND BROTHER: Your letter and also a copy of bill No. 19795 received. Will say in reply that all members of our lodge are greatly in favor of this bill in regard to automatic ash pans.

But will say that our members have been very lucky so far, and none of them hurt. But there have been two men hurt in the ash pits of this division; one of them had both legs cut off and died three days later, and the other lost a leg below the knee.

HUGO, OKLA., *April 11, 1908.*

Mr. J. J. HANNAHAN, *Grand Master, Peoria, Ill.*

DEAR SIR AND BROTHER: Replying to official circular No. 24. The only accident that has come under our immediate locality was to Billie Stewart, who got badly hurt while attending to ash pan in Hugo yard sometime last year, and was caught between the rods and drivers and his arm and shoulder against fire box, and fastened in this manner two hours, burning him and tearing the muscles of his arm. He was in the Springfield hospital five months and has not been able to return to duty yet. Accident was caused by another engine coupling into their train.

HALLSTEAD, PA., *April 16, 1908.*

Mr. J. J. HANNAHAN, *Grand Master, Peoria, Ill.*

DEAR SIR AND BROTHER: Brother Moses Conrod, a member of 283, was injured, and the following are the dates:

February 4, 1894, was in hospital eight months; was one year and a half before he could do anything, and there are times it lays him up yet.

1897, laid up four months.

1901, laid up three months.

1906, laid up two months.

1907, laid up three months.

His injuries were in his privates, done by the lever slipping off, and he can not do anything, only light work in the yard yet.

PITTSBURG, PA., *April 6, 1908.*

Mr. J. J. HANNAHAN,
Grand Master, Peoria, Ill.

DEAR SIR AND BROTHER: In reply to your letter of the 1st will state that our treasurer, Brother William T. Shannon, lost part of his left foot on April 29, 1900, while cleaning ash pan. Was run over by engine.

COAL KING LODGE, No. 343,
South Fork, Pa., April 20, 1908.

Mr. J. J. HANNAHAN, *Peoria, Ill.*

DEAR SIR AND BROTHER: Mr. John Castine, while under engine cleaning ash pan, had his hand crushed so that amputation was necessary.

This accident happened a few years ago, when Mr. Castine was hostler fireman.

HINTON, W. VA., *April 4, 1908.*

Mr. JOHN J. HANNAHAN,
*Grand Master Brotherhood of Locomotive Firemen
and Enginemen, Peoria, Ill.*

DEAR SIR AND BROTHER: In replying to official circular No. 24, will say that we have one man on the Hinton division of the Chesapeake and Ohio who has received a very bad burn while under engine cleaning out ash pan. And the members of 236 are very anxious to get this bill passed, and we have adopted resolutions to be sent to the Representatives at Washington, D. C., urging them to use their influence in the passage of this bill.

SHERIDAN, WYO., *April 5, 1908.*

Mr. W. S. CARTER,
Grand Secretary and Treasurer, Peoria, Ill.

DEAR SIR AND BROTHER: We have a switch engineer here by the name of Hammond who had his leg cut off about the knee. This accident happened while he was under engine cleaning out ash pan on the road.

Mr. FULLER. Now, Mr. Chairman, there is a change for the better, happily so. There are a number of roads that have awakened to the idea that an ash pan and the way it is applied is not an insignificant

thing after all, and that the safety of the men who have to operate it ought to be considered. I speak after having made an investigation of this subject, and while there are some roads that are honestly trying to meet this and when they have new engines built they are having them so constructed that a man will not have to get underneath to clean the ash pans, it is a fact that some roads care so little about it that they do not specify as to that feature when they order engines; they do not care whether it is a pan that can be dumped from the outside or not, and I understand from reliable sources that some of them, in ordering engines, specify that they shall be of the old type, and that locomotive builders have suggested the new style, where a man will not have to get underneath; but notwithstanding that, they have insisted upon their specifications being met, and the engines were turned out of the shop in that way. That is not all of the railroads, however, but there are some who do this. It is the same experience that we had with regard to other appliances.

If all railroads had made an honest effort to equip their cars with automatic couplers and automatic brakes, Congress would never have passed the law requiring them. But, unfortunately, there were some roads which did not give the matter proper consideration, and it was necessary to have legislation, and it seems as though that is the case in this instance.

Mr. Esch. Is it a thoroughly practical device, Mr. Fuller?

Mr. FULLER. Yes, sir, it is; I am going to come to that.

Mr. Esch. All right.

Mr. FULLER. The letters we have in response to this circular of Mr. Hannahan's, and the answers that we received from those lodges which were located on roads where they have the new kind of pan, say that they are working satisfactorily, and they report no accidents, thus showing that these accidents can be avoided by doing away with the old-style pan. Here is a letter from Minneapolis, Minn.:

MINNEAPOLIS, MINN., *April 13, 1908.*

Mr. J. J. HANNAHAN,
Grand Master, Peoria, Ill.

DEAR SIR AND BROTHER: Your letter, also official circular No. 24, was read at our meeting, and will say that there has not been an injury to a fireman in our vicinity while cleaning ash pans.

The locomotives are all equipped with automatic ash pans at this point on the Northern Pacific.

Hoping this information will aid in some way.

BONHAM LODGE, No. 616,
Bonham, Tex., April 10, 1908.

Mr. J. J. HANNAHAN,
Grand Master, Peoria, Ill.

DEAR SIR AND BROTHER: Your circular No. 24 of April 1, 1908, to hand and read to the above lodge, and wish to state that we have no trouble of this kind on the Transcontinental Division of the Texas and Pacific Railroad, as we have good ash pan blow backs on all of our engines, even switch engines.

Mr. PAYSON. How do those blow backs operate?

Mr. FULLER. They are a pipe from the boiler below the water line, generally running out ahead from the boiler head and coming back into the ash pan. The ends of these pipes are either flattened out or are perforated so as to spread the steam or water, and they open up

the back damper and turn on the pressure, and it simply blows the ashes out.

Mr. PAYSON. In cold weather how does that operate?

Mr. FULLER. In those countries where it freezes up the water feature of it has been objectionable, but down in Texas they say they are using them and they work very satisfactorily. However, the water feature can be done away with by using compressed air instead of water, the only difference being that in using the water it can be used to drown the fire so that there is no danger of fire, but in that country, where there is no prairie, nothing combustible with which the fire could come in contact, it does not matter whether air or water is used. It is a very simple device, the most simple and least expensive of any of them, as I understand it.

Mr. WANGER. That is, the one with the steam blow back?

Mr. FULLER. Steam blow back, or they can use air from their air drum instead of steam, whichever they see fit. These letters which I have submitted here show numerous cases of men being killed and injured, and the different ways in which they were killed and injured, and I also have a statement from the Interstate Commerce Commission showing the number of men killed and injured from this cause last year, and I will read it for the benefit of the committee. [Reading:]

INTERSTATE COMMERCE COMMISSION,
OFFICE OF THE SECRETARY,
Washington, April 3, 1908.

Mr. HUGH R. FULLER,

Legislative Representative of the Brotherhood of

Railroad Engineers, Firemen, and Trainmen, Washington, D. C.

DEAR SIR: In reply to your request for the information, the accidents upon the lines of carriers engaged in interstate commerce as reported to the Interstate Commerce Commission show, as will be seen by the table attached herewith, that 14 employees have been killed and 119 injured while under engines cleaning ash pans from January 1, 1907, to December 31, 1907, inclusive.

Very respectfully,

EDW. A. MOSELEY, *Secretary.*

DIVISION OF ACCIDENTS.

Statement showing number of employees killed and injured while under engines cleaning ash pans, from January 1, to December 31, 1907, inclusive.

Month and year.	Train men.		Train men in yard.		Yard train men.		Other employees.	
	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
January.....		2		2			1	7
February.....		5		1		2	1	10
March.....		5		1		2	1	2
April.....	1	2		1			2	8
May.....		4		1			1	6
June.....		5		1			1	7
July.....		2				1		4
August.....		1						9
September.....							1	7
October.....		4		2		2		2
November.....	1	3	1	1			1	5
December.....							2	2
Total.....	2	33	1	10		7	11	69

Total killed..... 14
Total injured..... 119

Total killed and injured..... 133

Mr. SHERMAN. It does not, in that report, of course, state upon what line and what point?

Mr. FULLER. No, sir; it does not. They do not, in their reports, in their statistics, show the lines upon which the men were injured.

Mr. ESCH. However, the data in the office shows the line.

Mr. FULLER. Yes, sir; the reports from which these figures were taken will show it.

(Mr. Fuller submitted the following letters:)

ST. PAUL, MINN., April 12, 1908.

J. J. HANNAHAN, *Grand Master, Peoria, Ill.*

DEAR SIR AND BROTHER: I read your circular in regard to firemen going under an engine to clean the ash pan. None of the members could tell of anyone getting hurt in that way. Most of our engines are equipped with dump pans of some kind.

JERSEY CITY, N. J., April 13, 1908.

Mr. J. J. HANNAHAN,
Grand Master, Peoria, Ill.

DEAR SIR AND BROTHER: Received your letter of the 1st instant in regard to the ash-pan bill. Will say that there has been no one hurt at Jersey City or vicinity on our road.

Our pans are cleaned from the side of the engine; no one compelled to go under the engine.

GREEN ISLAND, N. Y., April 8, 1908.

Mr. J. J. HANNAHAN,
*Grand Master Brotherhood of Locomotive Firemen
and Enginemen, Peoria, Ill.*

DEAR SIR AND BROTHER: Circular No. 24 and your correspondence of April 1 received and placed before the lodge last evening, and I was ordered to say to you that the men of the Delaware and Hudson system have very little to complain of in regard to ash pans, as they are operated from the deck, not automatically, but by a lever and by hand, consequently we do not have many accidents.

CARBONDALE, PA., April 8, 1908.

Mr. J. J. HANNAHAN,
Grand Master, Peoria, Ill.

DEAR SIR AND BROTHER: Beg to acknowledge the receipt of your favor touching on official circular No. 24, relative to a proposed legislative enactment governing the opening or closing of ash pans on locomotives. Would say in reply that all roads in this territory have their engines equipped with apparatus that enable the fireman to dump cinder at any point where "cinder boards" are erected for that purpose. This is accomplished while the engine is in motion, by a system of levers.

We have to be very strict in keeping these ash pan apparatus in good order. It is my lot to supervise the repairing of these parts.

No fireman is required or allowed to go beneath the engine to remove cinder from the ash pan.

There have been no firemen injured in this way that I know of or can learn of.

Mr. ESCH. Have you any idea as to the cost of installing that device on locomotives now?

Mr. FULLER. I was going to come to that, but I might as well state what information I have right here in answer to your question. You mean the cost of a single locomotive?

Mr. ESCH. Certainly.

Mr. FULLER. I have some general information myself, but I will read some letters here that I have received from employees inter-

ested in this question. Here is a letter from a legislative representative of the firemen's organization, who urged the passage of such a bill before the Ohio legislature. He says:

MIDDLEPORT, OHIO, *April 21, 1908.*

Mr. H. R. FULLER, *Washington, D. C.*

DEAR SIR AND BROTHER: In reply to your letter of the 18th instant relative to automatic dumping ash pans. These pans are made by the railway companies in their shops; usually the pans are put on when the engines are in for repairs, and while I do not know the exact cost of same, the officials I have talked with on the matter do not consider them expensive—from \$25 to \$35 per engine. The Pennsylvania Railway, Hocking Valley, T. and O. C., K. and M., N. W., and, in fact, all trunk lines in this State are equipping their engines with these pans, and they are finding it a profitable investment as a labor as well as a time saver.

Mr. STEVENS. Can they be installed on an old engine?

Mr. FULLER. Yes, sir; they can.

Mr. WANGER. What kind of a pan is that?

Mr. FULLER. He does not specify the type; it is an automatic, self-dumping ash pan.

Mr. WANGER. Some of those are very simple, where the fire box is high. The bottom of the ash pan goes downward, and the lever on the side opens and just permits the ashes to drop.

Mr. FULLER. Very simple, yes, sir; and the engine with a high fire box is the easiest equipped.

Mr. WANGER. And the cost would be lower than on an engine with a low fire box?

Mr. FULLER. The blow back will work on a high fire box or low one.

Mr. WANGER. There is no occasion to have a blower when you have a high fire box, is there?

Mr. FULLER. No, sir; except I think they can put it on cheaper; I do not think it is so expensive. There may be no difference in putting a hopper on a new engine, because I understand there is practically no difference between the cost of an old style pan and a new one, the one of which you speak, but you take an engine that is already equipped, and it is very probable that the blow back would be the easiest means of getting the ashes—rather, it would be cheaper to equip a locomotive with a blow back than a hopper pan.

Here is a letter from Bonham, Tex., and this gentleman says: A blow back will cost only about \$10.

APRIL 20, 1908.

Mr. H. R. FULLER, *Washington, D. C.*

DEAR SIR AND BROTHER: Your letter of the 16th to hand asking information in regard to our ash-pan blow back. Will send you a cut showing blow back. The most of our engines on the Texas and Pacific blow back work by air and can be operated while sitting on seat box by opening a valve connecting to your brake valve main reservoir pipe, say half an inch pipe, carrying air to blow back valve under belly of boiler, opening same. Air is shut off from cab. This blow back then closes by steam pressure automatically, or this blow back can be operated by steam pressure alone by fixing a lever on same, working like cylinder cocks from cab, calling it a pullback. This really is the simplest way, with less expense. I think \$10, cost of placing equipment on engine, a close figure, including work and material. There might be a patent on this valve, have not been able to find out yet. The time that can be saved to the company will soon pay for this; not only this, it is a great labor saver as well as life saver. We had some of our engines here equipped for over six years with this blow back. Write me for any further information you desire.

Mr. WANGER. Have you any statements from any builders of locomotives?

Mr. FULLER. I am just going to read from a letter here written by the mechanical engineer of the Rock Island lines to the Interstate Commerce Commission in response to an inquiry as to cost. He says:

CHICAGO, ILL., May 5, 1908.

Mr. EDWARD A. MOSELEY,

Secretary Interstate Commerce Commission, Washington, D. C.

DEAR SIR: * * * I do not believe that it would cost the railroads any extra money to equip new engines, provided the fire box is on or above the frames, with ash pans which could be made self-dumping and self-cleaning and operated from the outside, and probably the expense for changing such engines which are now in operation would not average over \$50 an engine, this cost to include the charges for new material used and the credit for the old material removed, provided, however, the roads are permitted to use such designs as are best suited to their types of construction and limited only to the external dumping feature.

This does not and can not apply to engines having shallow pans as above described.

Yours, very truly,

C. A. SELEY, *Mechanical Engineer.*

This bill proposes to leave it entirely with the railroad companies as to what type of pan they shall adopt. All we want is that it shall be such as will not require a man to go underneath to clean it.

There is one kind which Mr. Wanger described—a hopper, where the ashes drop out. There is another kind where the ash pan is too low, so that they can not have a hopper bottom. They have slides, a slide bottom to come out, pull out, between the wheels, and let the ashes drop. Where they do not have room enough for such slides to come out between the wheels, it is a very easy matter to cut a hole in the sides of the ash pan and put a hoe in from the side and hoe the ashes out, and in some cases they can put a hoe in there and not only hoe out and shove out on the other side, but from this side opening they can shove the ashes out of the ends of the pan. Then there are engines that have side dampers, no front dampers; the whole side of the ash pan can be opened up the full length of it and can be cleaned from the side much easier than from underneath.

Now, take locomotives where the space is too small between the wheels to have these side slides, or where they can not cut a hole big enough to use a scraper. They can be equipped with end bottom slides, and those end slides can be worked by a steam cylinder which can be used or operated by the engineer or fireman in the cab.

Barring this blow back, which I understand is very cheap, it does not cost anywhere near \$50. My general information is that ash pans will run, most of them, from \$50 to \$100, but you take this type, where it is necessary to put a steam cylinder on to operate these slides, in that case it might run to as much as \$250. I understand that all of these appliances are perfectly practicable. I do not know of one of them that is being applied by the carriers that is patented. They are designed either by them or the people who build their locomotives, and we insist that we are not in the position of coming here and asking Congress to pass a law that can not be complied with. We are fully satisfied that it can be complied with. It is true that there are some old-style low ash pans that it is going to be difficult to equip with these appliances, or old-style engines with low boilers that are going to be difficult to equip with these ash pans, but from engine builders we have the information that it can be done.

Mr. STEVENS. Have your organizations asked the railroad companies for them?

Mr. FULLER. You mean through our organizations?

Mr. STEVENS. Yes; presented your views to the railroad companies.

Mr. FULLER. I do not know that we have asked for these appliances in that way. As a rule, we do not get such concessions as that. It is necessary to have legislation to get them. I have here three or four cuts of locomotives, and I would like for the members of the committee present to look at them and just see how difficult it is for a man to get under there and clean out an ash pan.

Mr. WANGER. Do not the great majority of engines have very low fire boxes?

Mr. FULLER. No, sir; they do not. The engines that have been built of late years mostly have high fire boxes. The tendency of of late years has been to put the boilers up higher. You have probably observed that locomotives on a railroad do not lie nearly so close to the rail as they used to years ago, but those old styles which were built years ago, especially on the 8-wheel engines, there is a very wide space between the drivers, and it is a matter of only a few dollars expense to cut a hole in each side of the ash pan and pull or push your ashes out from the side rather than make a man go underneath.

Mr. ESCH. In some parts of the country a poor quality of coal is consumed and clinkers are formed. Would a blow back operated by steam, air, or water clean out a fire box in that case?

Mr. FULLER. My understanding of a blow back is that in order for it to work successfully it has got to be used frequently, before the ashes or clinkers accumulate. I understand that clinkers can be cleaned out after they give the fire time to die out. It is a very easy matter, when a man shakes his grate bars, to wait until that fire has time to cool, and then put his blow back on, instead of allowing his ash pan to become clogged up and filled.

As to patents, I presume there are 75 or 80 patents which seek to avoid the necessity of men going under engines, and some of them, I think, are entirely practicable; some of them, I think, are not. But we feel that this question has been worked out, is perfectly practical. It is true that this pan is going to cost some money, but here are at the rate of one hundred and thirty some men being killed and injured every year, and we think some steps should be immediately taken.

I will say, in regard to this bill, its provisions require that it shall go into effect the first of next year. That time we believe is too short, and we are willing to give the railroads reasonable time within which to meet this question and equip their engines. But we do say that it is possible for them to do it, and we sincerely hope that this committee will report this bill favorably, and that it may be acted upon at this session. I think that this committee will be fully convinced, even after it has heard the other side, that this is a practicable thing, and we hope your decision will be favorable.

Mr. SHERMAN. Let me ask you, you say there are 75 or 80 patents and devices for clearing the ash pans. Does not that substantially cover every possible way of clearing the ash pan?

Mr. FULLER. I think so.

The CHAIRMAN. Then how is the railroad to equip its engines with a device for clearing the ash pan except by obtaining the right to use some patent?

Mr. FULLER. I say that these appliances which are being used, or I think I said, I intended to make it plain, are not patented; they are being designed and put on by the builders or by the owners of the engines.

Mr. SHERMAN. How can a builder put on a device which is patented?

Mr. FULLER. The types they are putting on are not patented. They are so simple, Mr. Chairman, there are so many ways of meeting it, and some of these patents were granted years and years ago, in the seventies, and they have run out. I just mentioned patents to show you that the question has been worked upon, and we think sufficiently worked out. We do not want to be understood as wanting this legislation because it is going to help any patent; we would much rather that it can be met, and think it can and will be met, without using any patented device at all.

Mr. SHERMAN. I certainly did not suppose you meant to compel the railroads to do that.

Mr. FULLER. I did not think you did, but sometimes we have been accused of that, and I thought it might be well for me just to make that statement.

Mr. ESCH. This week the House added an amendment to the sundry civil bill extending the scope of the field of investigation of the block-signal system to all safety devices, and we also added another amendment giving that board the unexpended fund which was appropriated last year, the total sum being \$50,000, and there is over \$40,000 of that sum available. Do you think, as a matter of policy, it would be wise for this committee to await a recommendation from that board as to the best possible device, or act upon this bill now, in view of the fact, as you say, that the time set in the bill should be extended?

Mr. FULLER. My information is, Mr. Chairman, that the purpose of that resolution, or that provision of the bill, is to get information as to the practical part of it. There is no question about that in this case; this can be done. We know the number of men who are being killed and injured as a result of it, and we think the legislation ought to be passed now. If we waited until that general investigation is made and the committee reports it may be two or three years. While we are willing to give them ample time, we think it is time for the railroads of the country to know that they have got to meet this situation; give them reasonable time. I do not think this committee, after it hears this case, will agree with the suggestion that this is not practical, and I do not think it will come to the conclusion that the expense is so burdensome that they ought not to pass this bill at this session. We would like to see this enacted into law now, Mr. Chairman, at this session, because if we do not there is bound to be another year's record of accidents. Pass it at this session, but give the railroads as reasonable time to comply with it.

Mr. ESCH. What, in your opinion, is a reasonable time?

Mr. FULLER. I would like to hear from the other side. I have said we will give them more time, and if it is a question of time between them and us, I think we can agree.

Mr. SHERMAN. That hardly answers Mr. Esch's question. You mean to be perfectly fair, I know, in your attitude. He asks your

opinion. You know something of railroading. He wants to get your opinion as to what would be a reasonable time.

Mr. FULLER. I think they ought to have at least until the 1st of July instead of January, 1909. That will give them a year and practically two months from now.

Mr. SHERMAN. That is, assuming we passed the bill to-morrow.

Mr. FULLER. Yes. It is generally supposed that Congress will adjourn about the 1st of June; I do not know whether it will or not.

Mr. SHERMAN. If we did, that would give them a year and one month.

Mr. FULLER. A year and a month. I only wanted to say, in connection with this penalty feature, the safety-appliance law only imposes a penalty of \$100. The Government is prosecuting under that law now, and prosecuting dozens of cases against the same road, and it does not seem to have the moral effect that it should, and we think that if the officers of these roads, who are the means of these violations of law, were called to account for the expense in fines, that there would be more care taken to comply with the law. We think that \$100 fine is too small a fine for a railroad company. We think that if you are going to fine a railroad company you ought to make it an object, and I do not think \$100 does. That has been our experience, as we look at it, with regard to the safety-appliance law.

As to the practical part of the question, I have some letters here from locomotive firemen and practical railroad men which will show that these new devices which do away with the necessity of men going under engines are working satisfactorily:

WALDWICK, N. J., *April 19, 1908.*

Mr. H. R. FULLER, *Washington, D. C.*

DEAR SIR: We have a number of engines equipped with the self-dumping ash pans, and they give good results.

SAN MARCIAL, N. MEX., *April 10, 1908.*

Mr. JOHN J. HANNAHAN,
Grand Master, Peoria, Ill.

DEAR SIR AND BROTHER: Engines on this division (Rio Grande, Atchison, Topeka and Santa Fe) are equipped with ash-pan blowers, which it is believed would meet the requirements of the law.

CARBONDALE, PA., *April 15, 1908.*

Mr. H. R. FULLER,
The Ventosa, Washington, D. C.

DEAR SIR AND BROTHER: Beg to acknowledge receipt of your favor touching on an enactment now pending in Congress relative to operating ash pans on locomotives. Please find inclosed a crude outline and brief description of the ash pan in use on the Delaware and Hudson River Railroad.

The New York, Ontario and Western have a hopper ash pan that can be operated from the "deck," but their slides are held closed by means of hangers or bails, and when they are to be opened they swing instead of being pulled back, as ours are. Both styles give good satisfaction.

Should there be any defect in those ash pans to prevent the fireman from operating them from the tender we are not to allow the engine to go out until the necessary repairs are effected. You understand by this that the engine would be all right only the defective ash pans. If defects are such as could not be made in ten hours, then the engine is held until the next shift of repair men come in. The master mechanic is very strict on all safety appliances and will not allow any of his subordinate foremen to put engines in service that are defective.

GALESBURG, ILL., *April 20, 1908.*

Mr. H. R. FULLER,
Washington, D. C.

DEAR SIR: Your letter at hand this a. m., and I will give you all the information I can regarding the standard ash pan in use on the Burlington. This ash pan was adopted in 1892, and as far as I know is not patented, and was designed by William Lalor, who is still foreman of the boiler shop at Galesburg.

This ash pan was adopted with two ideas in view, one that the firemen need not go under the engine for the purpose of cleaning the ash pan, and the other to overcome the heating of back-driving boxes. There are very few engines in service on the Burlington that are not equipped with this ash pan.

This pan is of a hopper type, and in two hoppers—one front and one back—and each dumps with a lever on outside and can be cleaned from outside with front-end poker. The space between top of pan and mud ring is about 5 inches, and when pan is open all cinders can be readily poked out by inserting front-end poker over top of pan, and if engine did start there would be no danger to life or limb.

GALION, OHIO, *April 17, 1908.*

Mr. H. R. FULLER, *Washington, D. C.*

DEAR SIR AND BROTHER: Replying to your letter of the 14th, wherein you ask for information concerning the ash-pan law in the State of Ohio. Inclosed you will find copy of law. I can not say as to the number now in use, but I do know that the Erie engines are equipped with self-dumping pans, and are giving good service and working satisfactorily to all concerned. I do not know what the cost of equipping would be. The hopper is very simple, and it can be put up with little cost and inconvenience to the companies.

Mr. FULLER (continuing). I also have a copy of a letter written by the Baldwin Locomotive Works to the Interstate Commerce Commission in response to inquiries from the Commission regarding this subject, which I will also include. While the Baldwin people say that, strictly speaking, there is no such thing as an automatic and self-cleaning ash pan, they consider it desirable to employ wherever possible ash pans which can be dumped and cleaned without the necessity of employees going under the locomotives, and think it is desirable to frame a law requiring such ash pans.

BALDWIN LOCOMOTIVE WORKS,
Philadelphia, April 27, 1908.

Mr. EDWARD A. MOSELEY,
Secretary Interstate Commerce Commission, Washington, D. C.

DEAR SIR: We acknowledge due receipt of your letter of April 17, relative to Senate bill No. 6320, introduced by Senator Hemenway, requiring railroads engaged in interstate commerce to equip their locomotives with automatic self-dumping and self-cleaning ash pans, "which can be dumped and cleaned without the necessity of any employee going under such locomotive." We have not seen this bill and have no information respecting it other than that contained in your letter.

Strictly speaking, there is no such thing as an automatic self-dumping and self-cleaning ash pan. All ash pans require outside aid in order to be cleaned. What are called automatic self-dumping ash pans are really not automatic, but require some action on the part of the enginemen to put them into operation. A number of patents have been granted for so-called self-cleaning ash pans. One class of these provides that the bottom of the ash pan shall be made of rocking or tilting slats, like a Venetian blind, so that the ashes can be dropped. Another class provides for a system of pipes placed in the bottom of the ash pan and so perforated that jets of steam or compressed air can be blown through them, thus ejecting the entire contents of the ash pan. These devices have been invented and tested many years ago, but none have come into general use.

The principal objections to them are (1) that they are liable to drop fire along the track while the locomotive is running, and thus set fire to cross-ties and possibly to other structures, and (2) that they involve a considerable degree of complication, involving cost of maintenance and liability of becoming objectionable when out of order.

We are therefore of the opinion that it would be exceedingly unwise to pass any law requiring the use of automatic self-dumping and self-cleaning ash pans. We do,

however, consider it desirable to employ wherever possible ash pans which can be dumped and cleaned without the necessity of employee going under the locomotive. The designs and details of locomotives vary so greatly that it is impracticable to use any uniform style of pan in all cases. In many types of locomotives the self-dumping and self-cleaning ash pans above referred to would be impracticable of application. Ash pans are made in a great variety of forms, some of which are easily cleaned and some are not, owing to the obstructions of various other parts of the machinery. We inclose herewith blueprints showing typical forms of construction of ash pans now in use, as follows:^a

Print No. 3500 shows an ash pan of what is called the hopper type. At the bottom of each hopper is a slide, which is opened from the side of the locomotive by means of a poker. By this means the ash pan is easily emptied, without the necessity of anyone going under the engine. This style of pan has been used for a great many years, probably forty or fifty.

Another form of hopper pan is shown on blueprint No. 3703. This also has a slide at the bottom of each hopper, but instead of opening sidewise opens longitudinally. Print No. 5627, herewith, shows rigging for this purpose, and a handle at the side of the locomotive operates the shaft, which opens the slides. To do this, the fireman must stand on the ground alongside of the locomotive.

Another form with the hopper ash pan is shown by print No. 3691. This also has openings at the bottom of each hopper, but in this case they are operated by rigging, as shown on print No. 5898, which opens a cap under each hopper. In this case the operating handle is in the cab, and it is not necessary for the fireman to be on the ground to work it.

Still another form of hopper pan is shown on print No. 3680. Here are three hoppers, each closed by a hinged cap. These three caps are operated simultaneously by the rigging shown on ash-pan slide work, print No. 5895. This is done by removing the key at A and operating the rod by foot, which opens the hoppers. This also is done from the locomotive cab.

In addition to these pans, there are many flat-bottom pans, which are made to go under engines having low fire boxes and small driving wheels. In these cases the hopper self-dumping pans, so called, are not applicable. As a representative pan of a large variety of engines of this class we inclose print No. 3273. This pan is made with a large opening each side at A and B. When the side dampers are raised, as shown in red, the ashes can be cleaned out with a scraper, from each side of the engine, without going underneath. This is true of those classes of engines which have a fire box similar to the sketch herewith.

These engines have an overhanging fire box, which is rather close to the rail, so that there is no room to put these dumping pans in, but the desired end is obtained by making these pans with openings at the sides to clean them out, rather than in the front and back. In this way they can be cleaned entirely from the outside. In such cases it is impossible to use the hopper type, nor does it seem necessary. It seems to us that this pan meets with all requirements and does not subject the operator to any danger.

There have been many ash pans made requiring some one to get underneath the engine in order to clean them out, but it is only in rare cases that such a thing is necessary. Occasionally some special engine, which is very compact and cramped, makes it impossible to apply a really convenient and accessible ash pan. In a large majority of cases, however, ash pans can be improved, and it is desirable to frame a law not prescribing any special form of ash pan, but simply requiring that the ash pan shall be so made as to be cleaned from the outside in all cases where such a thing is possible.

Very truly, yours,

BURNHAM, WILLIAMS & Co.

Mr. FULLER (continuing). I also have here a letter from a locomotive fireman, in which he gives his reasons why such a law should be passed. It comes from an intelligent employee, and I think will be of some benefit to the committee:

HURON, S. DAK., March 17, 1908.

Mr. H. R. FULLER, Washington, D. C.

DEAR SIR AND BROTHER: I am going to give you a few reasons why I think we should have a law compelling railroad companies to equip their engines with automatic dump ash pans.

In the position you have held for the past nine years you have found that corporations will not spend any money upon safety appliances until compelled to by law. You remember how strenuously they opposed the bill compelling them to equip

^a Omitted in this print.

their engines and cars with automatic couplers and air brakes, and how, after the bill became a law, they delayed and pleaded for extension after extension of time in which to live up to the law.

The foremost reason why we should have the dump ash pan is that it would be an appliance to save life and limb. The type of engines used by railroads of to-day are such that a fireman to go beneath one must go down over the pilot and crawl back through the machinery or go through between the drivers in a space very little larger than his body. Now, if an engine moves when he is there he is surely caught unless he is fortunate enough to be able to grab hold of some part of the machinery and hang on until the engine stops; or if he is in the act of crawling in or out he is killed or maimed for life. I can not conceive of a man being in a more helpless position than to be under an engine on his hands and knees when an engine starts.

These railroad attorneys tell us that there is no excuse for an engine moving when a fireman is underneath, but there are a great many times when this occurs. An engine may have a leaky throttle and move herself or a whole train. We have had frequent occurrences of this on our own division; a few months ago an engine moved herself into the turntable pit when no one was watching her. Some might say that if an engineer is on the engine she couldn't move very far, but I want to say that if she moves 6 inches while a fireman is crawling in or out he is cut in two. Then again, when a train stands on a siding, a fireman may be compelled to clean the ash pan, and while in the act another train may bump into the rear of his train, and even if it is pushed but a car length the fireman is caught and killed. A few months ago a man was killed in just this way at Volga, on this division, and some time previous a fireman was killed in the same way at Mankato and another at Chadron. One of our own members was badly hurt in this way at Redfield and was unable to work for months afterwards.

Then again, when double-header trains are coaling or taking water, one fireman cleans his pan while the other engine is being coaled or is taking water. It frequently happens, and for various reasons, that the crew forgets that a man is underneath and moves up to allow the next engine to coal. You know what happens to the fireman. I have had this experience myself, and so have hundreds of others, who, had they not been quick enough to grab and hang to a driving axle or blowoff pipe, would have been dragged under and crushed, or had they been in the act of crawling out would have surely been cut in two. Just ask twenty firemen if they have had this experience and I will venture ten of them will tell you they have. I read recently of a fireman who was carried 7 miles hanging to an eccentric, and you will not wonder that the man never had the nerve to step on an engine again.

There are hundreds of firemen who are going through life minus one or more limbs, and they will tell you they met their loss by being caught by an engine while cleaning the ash pan.

At our legislature last winter we were met by the argument that the idea of a dump ash pan was not practicable and that they could not be operated successfully, but the Great Northern Railroad uses them on almost all their engines, and the men tell me they are a success; the Northern Pacific has them, the Chicago, Burlington and Quincy, and while some of them may not work perfectly at all times, they are no different than any other part of the engine, as we well know that an injector, an air pump, or in fact anything about an engine, may give trouble at times. Now, from a business standpoint: It costs about \$1.50 for every hour a train crew is on duty, so if you count twenty to thirty minutes for cleaning an ash pan three or four times on a trip it adds on an average an hour to the time it takes for every train to go over the road. Take a company which has 1,000 engines on the road every day, a dump ash pan would save them \$1,500 a day, which would pay for themselves in six months' time.

The railroads to-day are spending millions of dollars in leveling grades and straightening curves to enable them to haul more tonnage and save a few dollars in operating expenses. Where could they save it better than in equipping their engines with automatic dump pans? Again, wouldn't it be cheaper to put on this safety appliance than to pay the claims of those who lose life or limb for lack of it?

But we will suppose that the companies do not save one single dollar in money by this equipment, but some poor fellow's leg or arm is saved, then isn't it worth the money? Their representatives will tell you that a dump ash pan is not a good thing because a fireman will dump the ashes on bridges and endanger more lives, but this is a very flimsy objection, as all bridges should be covered. If a company is too poor to cover their bridges, the ash pan can be arranged with lever outside the cab, so they could not be operated without bringing the train to a stop, thus making it impossible to dump ashes excepting in places arranged for that purpose. The Chicago, Milwaukee and St. Paul are making an engine now with a pan which can be raked from the side without going beneath the engine, which shows that they are beginning to see the necessity of something safer than the old way.

Yours, fraternally,

A. M. URQUHART.

STATEMENT OF MR. S. C. NEALE, REPRESENTING THE PENNSYLVANIA RAILROAD LINES.

Mr. NEALE. Mr. Chairman and gentlemen of the committee, I do not propose to discuss at this time the provisions of this bill, because they are exceedingly technical in their character, and I confess it is rather difficult for any lawyer to comprehend, but I want to say at the outset, speaking for the Pennsylvania Railroad, that if we thought this bill practicable and if there was such a thing as an automatic, self-cleaning and self-dumping ash pan which would safeguard human life, I should be here to-day to favor the bill and not to criticise it. But I have been advised, sir, by those who know from long years of experience, that there is no such thing as an automatic, self-cleaning, self-dumping ash pan. There are a great many devices for the removal of ashes. Mr. Fuller has said there were 70 or 80 of them, but they are not automatic.

Now, will Mr. Fuller tell me, or will any member of the committee advise me, which of these devices will be adopted by this committee, and which of these devices will the railroads be required to adopt? It is quite true that different railroads have taken different devices. The Pennsylvania has one, the Chesapeake and Ohio has another, and the Southern Railroad has another, but there has been no uniformity. The matter is in an experimental stage, and until some result is obtained which will justify universal use of one of these self-cleaning, self-dumping ash pans, I assume that Congress should let the matter lie in abeyance. But, as I said, it is a question that is so technical in its character that I do not care to discuss it now. I have thought, however, that the committee might desire to hear the statements of gentlemen thoroughly versed in the provisions of this bill, gentlemen who have given years of study to the practical operations of railroads, gentlemen who can tell you all the things about ash pans. Therefore, with the permission of the committee, I should like to call Mr. John R. Alexander, the road foreman of engines of the Pennsylvania Railroad.

STATEMENT OF MR. JOHN R. ALEXANDER, GENERAL ROAD FOREMAN OF ENGINES OF THE PENNSYLVANIA RAILROAD EAST OF PITTSBURG.

Mr. NEALE. Have you examined this bill?

Mr. ALEXANDER. Yes, sir.

Mr. NEALE. Will you state to the committee what, in your judgment, is the practicability of this bill?

Mr. ALEXANDER. On the experience we have had with cleaning out ash pans we are prepared to say that there is no such thing as a practical automatic self-dumping ash pan. On the lines I am connected with we have made a great deal of effort to have a self-cleaning ash pan. That means only that we can open the covering on the bottom of the ash pan and it will then allow the accumulation of ashes in the pan to drop out. While they are thoroughly satisfactory they would not meet the conditions of a self-cleaning ash pan, and with their best results they have so many fatal and serious objections that it would be certainly unwise, from a practical standpoint, to see any requirements of that kind brought into the service.

Mr. STEVENS. What are those objections?

Mr. ALEXANDER. I will try to state them, sir. In the first place, an ash pan, to be serviceable in the districts in which I am engaged, must be one that will be equally serviceable through twelve months in the year. The ones we have some knowledge of are not successful through cold, wintry weather. In other words, we have great difficulty in opening a hopper or a door or a slide on a hopper, and later, when it is open, the contents will not run out. Then it is necessary in some cases to get under the locomotive in order to force the contents out of the pan. Some years ago we had a large number of locomotives equipped with one of the sliding ash pans that I heard spoken of here to-day. It is the kind that have a slide in the bottom of the ash pan. That was very objectionable, as well as all other ash pans with a cap on the bottom. With us the objection was, the pan was too long for any hole of a reasonable size in the bottom to clean the whole interior of the pan; it would drop out what was just over the hole, but it would not clean along the sides and at the extreme ends. A still more serious objection to all such devices is that air gets in through the interstices around the opening. The cinders drop into the ash pan in service and lie there, and if the pan is tighter, no air coming through the cinders, they die out and cause no further trouble. One of the most serious troubles to the railroads in the past has been the openings in ash pans admitting air, and the nearer you come to a self-dumping ash pan the more opening you have for air where you do not want it. That agitates the hot ashes, keeps them burning, and thoroughly burns out your ash pan so that it warps the pan in a very short while, warps the castings, and they are practically inoperative.

Then, again, when it comes to winter weather, they freeze up in addition to the warping. We have had in use steam pipes, hot water, and built fires underneath them from the track before we could draw the ash pan, or rather to draw the slide in order to get the ash pan clean. We have had our trains very seriously delayed by reason of the very excessive length of time it took to operate these so-called devices, or I am speaking more particularly of what is called "the slide ash pan." A little later, or at that time, they were applied to a large number of locomotives that had the deep fire boxes; that is, went between the frames and so close to the tracks that the ash pan has not more than 6 or 8 or 10 inches clearance above the top of the rail. That ash pan was equipped with that device. We have to-day closed practically all of those ash pans tighter at the bottom. The slide is removed and made fast. That was done for the reason I speak of—to facilitate the cleaning of the ash pan, but possibly just as much to overcome the fire risks. One of the most serious things which we have to contend with, again, in service is the hot cinders flying out from the ash pans and getting outside of the right of way and setting fire to property. For that reason, again, these slides were closed up. We also found it necessary on those older engines that had the air dampers, which all locomotives must have from the end side, they have now been closed, and we admit the air at a point high enough on the sides of the air box that prevents any air going up through the hot cinders, burning the sides and the back of the ash pan, and still doing the same service it did through the lower open door, and they are all closed while they are in service.

Coming again to our later types of engines, which are the wide fire box, built above the frame, we have what we term "self-dumping ash pans," which are fairly successful in good weather conditions, and we do not object to them where we can get them in, and we have them in, with the exception of the risk of getting air through the openings where the caps fit up, and we still have that trouble present, so much so that they are not considered a successful self-dumping ash pan.

Mr. ADAMSON. Is that on the plan of the bottom of coal carts and dump carts, that you just let down two lids and dump your coal and then draw them up again?

Mr. ALEXANDER. Yes, sir; it is done with a lever. We have a print here if you would like to see it.

Mr. SHERMAN. Let us see the print.

Mr. ADAMSON. You let the doors fall open and empty the ashes and then close them?

Mr. ALEXANDER. Yes, sir.

Mr. WANGER. They are used on the big engines that draw the express trains between here and New York?

Mr. ALEXANDER. On the passenger engines, yes, sir; they are not designed for the larger type of freight engines.

(Mr. Alexander explained a blueprint to the committee.)

Mr. SHERMAN. You have to get out of the engine to operate that?

Mr. ALEXANDER. From the track; from the outside of the railroad train.

Mr. FAULKNER. What is the effect of dropping coal all along the bridges and culverts?

Mr. ALEXANDER. It sets them afire.

Mr. SHERMAN. Does it affect the grate, too?

Mr. ALEXANDER. Yes, sir; it burns the grate up; it destroys the use of the locomotive. It is not the loss of a few days that it takes to fix the ash pan—it takes days—it is the loss of the locomotive's time that is so serious.

Mr. STEVENS. You do not consider that in comparison with the loss of life, do you?

Mr. ALEXANDER. Not at all, but we find that as an objection to the present device being successful in service.

Mr. ESCH. Do you use the blow backs in your system at all?

Mr. ALEXANDER. No, sir; or they could not on account of the wintry weather conditions.

Mr. STEVENS. If the word "automatic" were stricken out of the bill, would that make any difference in your finding an appliance to fit the law?

Mr. ALEXANDER. Not to the extent that it would be positively successful in all cases; no, sir.

Mr. ADAMSON. Do you not think it would be a great aid in the saving of life to just lock the wheels of the engine until the box is cleaned out?

Mr. ALEXANDER. We have most positive instructions that no locomotive is allowed to have an ash pan cleaned that is attached to a train and does not have the brake plain—the automatic brake and the hand brake.

Mr. ADAMSON. It seems to me that the accident which Mr. Fuller referred to was occasioned by the giving of a premature order which the man had no business to give.

Mr. ALEXANDER. On the lines with which I am connected the disobedience of orders would be in connecting the engines in a place where they should not have been connected.

Mr. NEALE. Is it not true that we are constantly making experiments to develop self-dumping and self-cleaning ash pans?

Mr. ALEXANDER. Yes, sir; the people with whom I am connected all concentrate on that in order to bring out a self-cleaning ash pan, and they would put it on in a minute.

Mr. NEALE. Would it not dispense with many employees?

Mr. ALEXANDER. Yes; it is one of the most expensive factors in operating roads.

Mr. NEALE. What you want to bring to the attention of the committee is that this whole matter is in an experimental stage?

Mr. ALEXANDER. Yes, sir.

Mr. NEALE. Is it not true that men have to get under the engine to perform other duties?

Mr. FULLER. I do not think that is pertinent to the question before the committee.

Mr. NEALE. Mr. Alexander is a practical man, which I am not, and we want to show the facts about the matter.

Mr. FULLER. The bill does not seek to cover anything except this one matter of ash pans.

Mr. NEALE. You made a statement that certain deaths occurred on account of certain duties having been performed, and I want to show what the true condition is by asking certain questions.

Mr. WANGER. Have there been any employees of the company injured by getting under the engines to clean the ash pans?

Mr. ALEXANDER. In answering Mr. Neale's question, I will say that there are many other duties that require us to get under the locomotives. In answer to your question, I will say that there are a number of employees injured in ash pits and cleaning ash pans. But we went over the record very thoroughly of the Buffalo division, where they cleaned 238,000 ash pans in the last four years, including the ash-pit work and what was done on the road, and there were five men slightly injured. As to two of those men their injuries had nothing to do with their work. In other words, one of them was hurt by another throwing a tool off of the top of the tank while he stood beside the engine, but he was what he call an ash-pit man, and that was put against the ash pit. But there were three accidents on that division of a slight nature that could be attributed to doing the work. You might say, "Was that the danger of getting in and out?" No, sir. It was such danger as walking back under the engine and lifting his head up before he got clear, and in one case he fell while in the pit, but there was no case of a fireman on the road on that division hurt.

Mr. STEVENS. How about other divisions?

Mr. ALEXANDER. I can only speak of the division with which I have something to do. On the division with which I have to do I only know of two cases of men being hurt at all while engaged in working about their engines.

Mr. NEALE. What period?

Mr. ALEXANDER. During the period of four years.

Mr. WANGER. You know of no instance of an engineer starting his engine while there was an employee under it to clean the ash pan?

Mr. ALEXANDER. Not to clean the ash pan. I do know of an instance of him being under there, but not to clean the ash pan.

Mr. STEVENS. Do you not think, if we have some kind of a statute that would hurry you up a little in perfecting your devices, that it might help to save loss of life?

Mr. ALEXANDER. No, sir. We have a general manager who hurries us up pretty fast. If we move fast enough to keep up with him we will do very well.

Mr. ADAMSON. It might scare you so that you could not think at all?

Mr. ALEXANDER. Yes, sir.

Mr. PAYSON. I would like to ask Mr. Alexander a question that occurs to me. In the present state of the art of the manufacture of these ash pans do you know of any device now that is attempted to be used where there will not be instances of the ashes and cinders clinking or piling up in masses, and so on, so that it would be absolutely necessary for somebody to get under the engine to loosen them? Do you know of a single device where that, at the same time, is not required?

Mr. ALEXANDER. No, sir; I do not.

Mr. SHERMAN. Right there, do you know of any present device where there is a blow-out, either by air or by steam or by water, that is now in use?

Mr. ALEXANDER. I have seen locomotives equipped in that manner; yes, sir; on other roads.

Mr. SHERMAN. And you know of cases where, even as thus equipped it was still necessary to put the engineer or somebody under the engine in order to clean out the ash pan?

Mr. ALEXANDER. Any device of that kind; yes, sir.

Mr. ESCH. When you have side doors to that ash pan, can it not get cleaned without getting under?

Mr. ALEXANDER. In many cases the locomotives can not have those side doors that would clean the whole interior of the ash pan.

Mr. ESCH. But if they have a type that would permit of such an ash pan, would that not meet the requirements of that law?

Mr. ALEXANDER. Not to the extent that it would meet all the objections.

Mr. ESCH. It would save going underneath, would it not?

Mr. ALEXANDER. To the extent to which he could clean the fire it would.

Mr. ESCH. Could he not clean it with a side door?

Mr. ALEXANDER. No, sir.

Mr. ESCH. Could he not get every corner of that ash pan with his hoe?

Mr. ALEXANDER. With an ash pan the length of that [indicating] he could not make it so.

Mr. ESCH. Mr. Fuller stated that there were some of them that had doors as wide as the ash pan.

Mr. ALEXANDER. I remember he spoke of a four-wheeler.

Mr. FULLER. I did not confine that to a four-wheel engine. There are ash pans on engines other than four-wheel engines that open their full length on the sides.

Mr. NEALE. I understand that your experience is not confined to the Pennsylvania Railroad, but while in the service of the Inter-

state Commerce Commission you have traveled considerably and seen other railroads. Is that correct?

Mr. ALEXANDER. Yes, sir. If you look at that photograph—while I did not see that particular engine—you will find that where the ash pan is run out each side there is a wall. In photograph No. 1 the hopper comes like that. There is the other axle, there is another, and you might put a hole in that way and clean some that way and that way [indicating], but you could not clean the entire ash pan. I know the construction of all locomotives of that type.

Mr. ESCH. These are the Baldwin make? Does the Pennsylvania use the Baldwin, or what type?

Mr. ALEXANDER. Of that type; they make them themselves.

Mr. WANGER. How long have you been road foreman of engines?

Mr. ALEXANDER. About five years, I think.

Mr. WANGER. You were a practical engineman prior to that?

Mr. ALEXANDER. Yes, sir.

Mr. WANGER. For how many years?

Mr. ALEXANDER. Since 1874, up until about 1890, and from that time until about five years ago general steam-road inspector, looking after general work.

Mr. SHERMAN. And you were in the employ of the Interstate Commerce Commission for a time?

Mr. ALEXANDER. Not in the employ, sir, but I made an inspection trip covering air-brake conditions practically all over the country.

Mr. NEALE. At their request, though?

Mr. ALEXANDER. At their request, accompanying two of their inspectors, and we made the report to Mr. Moseley, and of course as a railroad man a lot of these things were quite interesting to me everywhere I went.

Mr. STEVENS. This statute is not so bad when you come to examine it, Mr. Alexander. Is it not possible? Let me read [reading]:

It shall be unlawful for any common carrier engaged in interstate or foreign commerce by railroad to use any locomotive in moving interstate or foreign traffic not equipped with an automatic self-dumping or self-cleaning ash pan, which can be dumped and cleaned without the necessity of any employee going under such locomotive.

You notice, first, it is made unlawful——

Mr. WANGER. Would it not simplify the matter if, instead of an automatic, self-dumping, self-cleaning ash pan, that read “with an ash pan which can be dumped and cleaned without the necessity of a man going under the locomotive?” I think that would meet the purpose explained by the proponents of the bill and would remove all quibbles about words.

Mr. STEVENS. What objections are there to that?

Mr. ALEXANDER. From the state of the art no device of that kind will cover all locomotives, or one-half of them, possibly. For instance, outside of the trunk-line railroads the larger part of the locomotives have fire boxes of that type [indicating on photograph], which are all within 12 or 14 inches of the track. There is no device designed to-day that will self-dump or self-clean the ashes out of that kind of a pan.

Mr. STEVENS. Have other railroads many of those?

Mr. ALEXANDER. Every railroad that I know of has the deep fire box locomotive.

Mr. STEVENS. Is there not any device that you know of that could apply to such a locomotive and yet fit the liberal requirements of such a law as Mr. Wanger has suggested?

Mr. ALEXANDER. No, sir.

Mr. STEVENS. That would not provide against going under the locomotive, but just one which can be dumped and cleaned without the necessity?

Mr. ALEXANDER. I am afraid I did not catch the drift of that question.

Mr. STEVENS. The question is, there is no penalty against going under a locomotive for that purpose, but a device which can do that work if properly operated—

Mr. ALEXANDER. You mean that if it could be operated he could go under and that would be all right?

Mr. STEVENS. Under ordinary conditions he could do the work without his getting under, but there is no penalty if he has to get under it occasionally.

Mr. PAYSON. Is that your construction of that bill?

Mr. STEVENS. That is my construction.

Mr. PAYSON. It is not the construction of any railroad man I have seen, and it is not the construction Mr. Fuller puts on it.

Mr. SHERMAN. Mr. Alexander, how frequently does the ash pan have to be dumped—I mean in an engine that is being operated where the steam is up?

Mr. ALEXANDER. Let me restrict that to bituminous coal, which is my experience. We clean the ash pan not less often than once every 100-mile run. According to the service, sometimes there will be in the neighborhood of 60 or 75 mile runs, but none less than that.

Mr. SHERMAN. Do you mean 100 miles for a passenger or a freight train?

Mr. ALEXANDER. Passenger locomotives. I do not know of a place in the country, I mean in the eastern country, where they clean the ash pans en route except at the different terminals where they have pits, and freight trains, where it will mean a three to five hours' run under the hardest conditions, but generally six or eight hours' run. It is more a question of hours, perhaps, than miles, with freight trains. It is the load they drag and the speed they make.

Mr. SHERMAN. Then, in ordinary every day practice, are the ash pans cleaned, as a rule, at pits?

Mr. ALEXANDER. Absolutely, always, sir, with the Pennsylvania line.

Mr. STEVENS. How about other lines?

Mr. ALEXANDER. I can not speak of any but my own lines.

Mr. STEVENS. You testified that you have been over the country and have had some experience.

Mr. ALEXANDER. I could not say whether they have been in the habit of doing this work at many outlying points where engines may run, and turning, come back, or not. I did pay some little attention to all the questions on the different engines, and I think I can say that, with the different railroads I was with, they did not clean the ash pans out anywhere except where pits and men were provided. I never saw the fireman do it in all my trip.

Mr. ESCH. Are there rules to that effect?

Mr. ALEXANDER. Yes, sir.

- Mr. STEVENS. Sometimes a rule is more honored in the breach than in the observance.

Mr. ALEXANDER. Where they have a rule of that kind, the firemen generally see that there is somebody there to clean the ash pan.

Mr. SHERMAN. The danger of injury, then, of cleaning an ash pan at a pit is practically eliminated?

Mr. ALEXANDER. Yes, sir. At some of our pits the men do not go out through the wheels at all; they do not even get down in front of the engine, or behind the engine; they have tunnels to go out underneath the rails and come up to the level of the track. At modern places, where a great many engines are taken care of, that is the arrangement, and on our engines that are very compactly built, where we have ash pits, it is the practice to go down in front of the engine, and they do not get under the wheels. I do not think I have seen anybody in recent years go and clean the ash pan through the wheels.

Mr. WANGER. Then the Pennsylvania Company would not be inconvenienced if the provision was not made to apply where ash pits were constructed so that the employees could be relieved from the necessity of crawling under between the rail and the frame of the engine?

Mr. ALEXANDER. I do not want to answer that hastily; I want to try and make plain that as to the operation of a device of that kind, we have not yet seen one that will answer the purpose, that will get the ashes out without getting underneath the engine.

Mr. WANGER. Just now I was referring to that statement that many of the ash pits were furnished with tunnels.

Mr. ALEXANDER. That is not at any point along the line between terminals; that is only at terminals where we handle a large number of engines.

Mr. WANGER. The main terminals?

Mr. ALEXANDER. Yes, sir.

(Thereupon, at 4.05 o'clock p. m., the committee adjourned until to-morrow, Saturday, May 9, 1908, at 2 o'clock, p. m.)

COMMITTEE ON INTERSTATE AND FOREIGN COMMERCE,
HOUSE OF REPRESENTATIVES,
Saturday, May 9, 1908.

The committee met at 2 o'clock p. m., Hon. Irving P. Wanger presiding, having under consideration H. R. 19795.

STATEMENT OF MR. DAVID F. CRAWFORD, GENERAL SUPERINTENDENT OF MOTIVE POWER OF THE PENNSYLVANIA RAILROAD LINES WEST OF PITTSBURG.

Mr. NEALE. You are charged with the equipment west of Pittsburgh?

Mr. CRAWFORD. Locomotives and cars.

Mr. NEALE. How many locomotives have you under your jurisdiction?

Mr. CRAWFORD. About 1,700 or 1,800.

Mr. NEALE. You have examined this bill, Mr. Crawford?

Mr. CRAWFORD. Yes, sir.

Mr. NEALE. Will you state to the committee what, in your opinion, its practical effect would be?

Mr. CRAWFORD. With any known ash pan, any ash pan that I know of, either by description or inspection or trial, it would be impossible to comply with the law all the time, absolutely impossible. There is no such ash pan in existence that will satisfactorily act as a self-cleaning ash pan in cold weather. Every railroad in the country, including the Pennsylvania Railroad, I think, has and is experimenting with various designs of locomotive ash pans to accomplish the self-cleaning, not the automatic self-dumping, but the self-cleaning ash pans, for the purpose of expediting the movement of the engines over the ash pits and for the purpose of saving expense at the ash pits.

Every locomotive in operation has the ash pan cleaned at least once a day, perhaps twice would be a fair average. They are cleaned over ash pits provided for the purpose at the terminals and between terminals where such cleaning occurs sufficiently frequently to require it. The ash pans are cleaned by ash-pitmen employed for that specific purpose, and at no point on the lines which I represent are the firemen required or engine men required to clean ash pans except in cases of emergency which occur.

Mr. ESCH. Is that your freight engines as well as passenger?

Mr. CRAWFORD. Yes, sir; on freight runs where they use more coal or generate more ash between the terminals than would be taken care of, there is a cleaning pit provided in the track where these engines stop and the fires, or ash pans, are cleaned.

We have in the past equipped a great many locomotives with the so-called self-cleaning ash pans. We want it for the purpose I just mentioned. We have taken them off because they were absolute failures. Notwithstanding the absolute failure of three or four designs, we have prepared other designs and are preparing other designs in our endeavor to get an ash pan which will be self-cleaning, not automatic.

By self-cleaning I mean an ash pan of such design that the ash-pit attendants, not the engine men and firemen, because they do not have to do it enough to even think about it with us, and on the majority of the larger roads, as I understand it; but we want a device that the ash-pit attendant can go and turn a lever, open some doors, and the ashes will drop into the pit, and then close the doors and the engine will move on into the engine house and be turned out ready for another train. As I said before, we have tried a great many of these devices. They have been fairly successful in summer; the only difficulty that we run into in summer was that all of these devices involved a closure, a joint of some kind, and that joint leaks a little air, and the ashes which would otherwise slowly die, ignite, and the castings with which these slides or doors close up and the levers which work them are warped by the heat, and the doors do not close perfectly. Then we distributed fire along the line and set structures on fire, and sometimes outside structures along the railroads. That is the only trouble we have with those in summer, not very much, but it just requires quite a little attention to keep them in shape. In winter, from about the 1st of September until about the 1st of March, the self-cleaning feature goes into eclipse, not every trip, but frequently. If we would take the entire bottom off the ash pan, just open it, the ashes and ice would stay

there, they do stay there; I have seen them stay there. It has to be knocked out or sawed out. If we have an engine that can stay in the house eight hours like a passenger engine, we could spare it; it would not be needed for the schedule, we could stand it and let it stand until it thawed out, but we can not do that; we need our engines, especially freight engines—in good times, not now.

We then build a fire out in the middle of the track just before the engines go to the ash pit, and they stand there a proper time to soften this mass of ash and ice so that it can be pulled out, and even when we get the hopper doors thawed enough the ashes do not come out until they are knocked out. That occurs with us in the territory I am familiar with any time from the 1st of December to the 1st of March. We have, on occasions of that kind, had our very important trains stand at the stations waiting for an engine because we could not push the engines over the ash pit fast enough and keep them working in rotation for the trains, our passenger trains. Each of the different schemes of ash pans we have tried have been improvements on the ones before them, but none of them have come yet, and there never will be an ash pan put on a steam locomotive that will work in cold weather. There never will be one that will work every time. This law means that it must work 100 times out of 100, or we will be fined or something will be done to us. That will never occur; it will never happen; and it is ice, and not mechanical design, which is the controlling feature. I am speaking from absolutely personal inspection of many ash pans in cold weather.

Mr. WANGER. How frequently do those difficulties occur?

Mr. CRAWFORD. Every trip in winter, if the weather is cold enough, at each end of the road. If a passenger engine that leaves Chicago—I will speak of the territory that I am familiar with—and comes to Fort Wayne, which is the end of the route, it must go through that performance. If we have luck, it will only stay on the fire a little time getting thawed out, and then it will go on the ash pit, but, by the way, the men get down in an ash pit prepared for the purpose; it is a place 3 feet deep, where a man stands under the engine and has ample room to move around, and he breaks this ice up with a bar, pries it, breaks at it until he gets it into chunks that he can get out into the ash pit.

Mr. ADAMSON. While he is in that position, if the engine starts he can duck?

Mr. CRAWFORD. That is what he does; he ducks. That occurs every time a fire is cleaned in cold weather, when it freezes. It freezes up; the ashes drop down in there; they are warm, and they deposit moisture from the atmosphere; there are always a lot of little leaks around an engine, little drain pipes and various things that put a little water into the ash pan; snow blows into the ash pan, melts, and freezes, and I have seen cakes that big [indicating] of ice and ashes cover the whole floor of the ash pan when there was a slide door there, and moving the slide door did not amount to anything.

We want this self-cleaning ash pan; we are working to get it, entirely independent of this bill, without any reference to it; we are experimenting continually on the Pennsylvania lines west. I have the advantage of the entire staff of the lines east through Mr. Gibbs, my colleague, with whom I work, their entire test department, and we

are all working to accomplish just this purpose—to put a self-cleaning ash pan on—but not primarily for the reason that this bill is put up, because it has never been brought to our attention from that point of view.

Mr. PAYSON. Make that a little more specific; what complaint has there been?

Mr. CRAWFORD. There has never been a complaint brought to my attention, and I am in very close touch with our enginemen, firemen, and all the men through the foremen, the master mechanics. There has never been a complaint about a lack of safety about our ash pans, never once. I worked in the roundhouse myself, and in my shop work I never heard of such a thing. I know, of course, that it is dangerous to get under an engine at any time, even in the shop; I have been under them there myself and had to dodge.

Our men have the fullest and freest opportunity to consult with us, to bring these matters to our attention. One of the young men that I see once a week had seven years' experience as a locomotive fireman. He is most interested in the mechanical design and improvement of the locomotive from every standpoint, but he has never spoken to me about it; he was in my office for three years, and his duty was to go out on the road, ride on engines, and come in and tell me what was wrong about them and what the men said about them.

Mr. RICHARDSON. You said you were trying to get an ash pan outside of the one required by the law?

Mr. CRAWFORD. No; we are trying to get a self-cleaning ash pan for the purpose of reducing the time that it takes an engine to go what we call over the ash pit, and for reducing the expense of that operation. It has never come to us as a life-saving device, as we have never had enough accidents, men injured or killed, to look at it from that point of view. The first time it came to me from that point of view was some two years ago, when the Ohio legislature had this same matter up, and last week when the bill was referred to; it has never come to me from our employees, the men who clean these ash pans, and I was just describing to the chairman and gentlemen that I had ample opportunity to get such information; that I am not away off from the men, where I can not hear what they have on their minds; they do come and tell me. I simply say that if this law is passed no railroad in this country can carry it out, because the device to do it does not exist.

(Hon. James S. Sherman took the chair.)

Mr. ADAMSON. But you are striving to invent or find one in the interest of economy?

Mr. CRAWFORD. Absolutely, sir; and the minute we get it it will be put on so quick that it will surprise you, because anything that pays its way goes, and I have had the word "safety" before me for twenty-seven years, during my service in the motive-power department, and anything we can do that gives some reasonable assurance of being safe we are going to do it without any delay. Sometimes there is a great deal of difficulty in finding out a thing that is sufficiently safe to warrant its adoption. You have to work it out like this proposition, although we are not working this from a safety standpoint at all, because it never came to us in that view. We are working entirely from the standpoint of it being a mechanical device

in that it will give us a greater use of our power to haul the traffic of the country and will result in economy of operation.

We would like to have such an ash pan, as I said before, an ash pan that we could just go turn a lever, the ashes fall out, and we could shut it up. We would like to have it. On the lines I am directly connected with we have two or three such things. I think the latest one was designed July 30, 1907. We have had them on engines, several different designs, and they have been taken off because they would not work out. In winter they tied the round-house up so that we could not get engines on the turntable and turned out to take a train again, because they were frozen up. We had to break the door off, but the ashes did not come out; the ice kept them there. There is no such a thing, to my knowledge, and I have examined a great number in the railway papers; some of the locomotive builders have shown us from time to time designs that have been tried by other roads, but nothing indicates the unsettled state of the art more than this. We would like to have it.

Mr. Fuller, in speaking yesterday before the committee, said there were 70 or 80 patents on devices of this kind. That is true. We are being sued for one of these experimental pans that may be infringing one of those patents, and it is going to be pretty hard to design an ash pan that will not bump into some of those 70 or 80 patents, but even if it was, a patented device that would pay its way would go all right, law or no law. Commercial necessity demands it.

Mr. LOVERING. When a man is injured or killed under the engine dumping this ash pan, does the railroad do anything for him?

Mr. CRAWFORD. I do not know, sir; that is a matter for the legal department. It is referred to the proper officer and every case is reported.

Mr. LOVERING. May a man not be killed there and yet the railroad not lose anything by it?

Mr. CRAWFORD. I really do not know that side of it, sir; I am an engineer. That is the side I do not come in contact with. I know it is promptly reported to the proper people, any man who is scratched or hurt. The number of men injured on the lines is so small that I have never heard, in my position, of one being hurt.

Mr. PAYSON. In connection with ash pan work.

Mr. CRAWFORD. In connection with ash pan work. Men go under locomotives for other purposes quite as frequently as to clean the ash pans. At the end of every trip an inspector goes under the locomotive to see that the nuts and bolts are there all right; he has to go under there, and the ash pan man goes under in a pit built for the purpose.

Mr. ADAMSON. Does not somebody have to get around under there and burnish and oil the engine occasionally?

Mr. CRAWFORD. This inspector goes through there, and if he finds a driving box that he thinks needs oil, he marks it or puts it on his report or the engineman puts it on his report, repairs he would like to have fixed. There are probably from one to a half a dozen men under every engine at the end of every trip, over a pit, and the ash-pit men are in a pit; the engine is over a pit at the time.

Mr. NEALE. These pans are not cleaned by firemen except in cases of emergency, are they?

Mr. CRAWFORD. On the Pennsylvania line the pans are not cleaned by firemen and enginemen except in cases of emergency, and as soon as we ask them they say that they want an ash-pit man.

Mr. ESCH. We realize that the Pennsylvania road is one of the best equipped roads in the country. Is this not true, that there are many other roads in the country where ash pits are not as numerous and where ash pans must be cleaned on the roadway?

Mr. CRAWFORD. Yes, sir; but the freezing point will still remain the same on those roads.

Mr. ESCH. I know, but there is a great deal of country where the freezing point does not cut much figure.

Mr. CRAWFORD. If the law would be worked out to cover all those local conditions and be fixed up, that would be a different proposition.

Mr. SHERMAN. As a practical proposition, how often is an ash pan usually cleaned—oftener than between the points of the division?

Mr. CRAWFORD. On passenger runs, sir, very rarely; on freight runs specific ash pits are provided by the majority of roads that have to clean, except in emergencies. Now, take a division 150 miles long that freight trains go over day after day and are only cleaned when they reach the other terminal, and from some unforeseen reason the ash pan gets full, it is quite possible that in an emergency the fireman will clean the ash pan; he generally does it if there is not a telegraph office near where he can wire that the engine must give up the train on account of no steam.

Mr. SHERMAN. Let me ask you one more question. What would be the approximate cost of preparing one engine with this proposed new type of ash pan?

Mr. CRAWFORD. The cost would run all the way from probably \$40 or \$50 to \$250, depending on the type of engine. But, sir, after we have expended that we have nothing; the railroad companies will have spent \$250 per engine for something that will work fairly well, not efficiently, but fairly well up until the 1st of November, and then it will get worse and will not work, and then some of us will think, "If we just put this bolt over here it will be better," and we will spend another \$150, and we still will not have anything, because it is impossible.

Mr. ADAMSON. All the pictures we looked at yesterday—and they are in accord with locomotives we have seen—represented so many axletrees in the way of where they wanted to put in the ash pan that it would be hard to put in any of these devices. I suppose it is necessary for the strength of the engine that those axletrees must be under there.

Mr. CRAWFORD. Yes, sir; the distribution of weight. The proposition is, and I feel I am quite safe in saying it, that probably only one out of 100,000 ash pans cleaned is not cleaned over a pit; that is only a guess, but I can not remember of such a thing.

Mr. ESCH. That is on the Pennsylvania system?

Mr. CRAWFORD. No, sir; as a general proposition.

Mr. ADAMSON. That other one that is not cleaned over a pit might in some way be held stationary until you could safely get it worked out?

Mr. CRAWFORD. I believe Mr. Alexander told our instructions yesterday, and our lines east and west work together; what applies to

them applies to us. The instructions are that the engine must be detached.

Mr. ADAMSON. If 999 were cleaned over a pit, it looks as though you could hold the extra one long enough.

Mr. CRAWFORD. We are trying to. These blowers, that a good deal of stress has been laid on, both in the technical papers and mentioned by Mr. Fuller yesterday, when you turn one of those blowers on 6 times out of 10, some fraction, it just blows a hole through the ashes and leaves the rest there. If we blow ashes back over our locomotive tenders, we are going to have hot boxes, and train delays, and in the State of New York the public service commission would say things. We are going to be put to expense if we turn those sideways, we are going to litter up our platforms, set buildings on fire, scare horses, and hurt people who are not in the roadway. That is not an efficient device; it is a makeshift, and a poor one. Out in Texas, where they have warm weather and probably an open country so that they do not mind, they can blow those ash pans out. They do not use that at terminals, as I understand it. We have never used any. It is merely when the engineman feels that his ash pan is being filled up and he is in trouble, he blows it out on the roadway or on the tender. I can not conceive of anybody wanting to blow ashes over their road occasionally.

Mr. FULLER. May I ask a question?

Mr. SHERMAN. If Mr. Crawford is willing.

Mr. FULLER. I just want to ask you if you speak now with regard to this type from experience?

Mr. CRAWFORD. You mean this ash pan blowing business?

Mr. FULLER. Yes.

Mr. CRAWFORD. No, sir; I hope I will never have to have it.

Mr. FULLER. Is it not a fact that some roads have been using it for a number of years in the Southwest?

Mr. CRAWFORD. Oh, yes; they have them on the engines; we have things on the engines we are not using.

Mr. FULLER. I say using them.

Mr. CRAWFORD. They say so. I would like personal evidence on the utility of such a device before I would act on it.

Mr. ESCH. Would not a blow back using steam help to throw out your ashes?

Mr. CRAWFORD. No, sir. A clinker that gets in an ash pan is not blown out with steam. You do not put a little hook in there and pull it out, you get a big bar and push it out with all the force you have, and sometimes two men have to combine their efforts, and then you pry it out. It is no light thing. A piece of clinker will be met with of iron a cubic foot in size, or more than that.

Mr. ESCH. In the nature of slack?

Mr. CRAWFORD. Yes, sir. I am speaking of bituminous coal districts. All the coal I am familiar with is bituminous coal around Pittsburgh. I can not understand; there must be a feeling that there is a disposition on the part of the railroads not to put safety devices on their equipment. I do not understand it. For twenty-three years I have been trying to do nothing else, as an engineer, not as a railroad man. We are trying to get these devices from economical reasons, because the safety proposition has never been brought up to

me. I see our men frequently and they never come to me and tell me it is dangerous. Why do they not? If they did, we could do nothing more than we are doing. We certainly would not keep 1,800 engines with an equipment that we did not know whether it was going to work or not. But we do keep 8 to 10 to try them, and if they work we keep working them, doing our best to make them work—not only one man, but a big staff of draftsmen, a staff of men like Mr. Alexander, who go around and see whether these things are working right or not, using every reasonable human endeavor to do the thing right.

Mr. PAYSON. Whenever the element of danger is attendant on any operation connected with motive power, is not your attention invariably called to it by the men?

Mr. CRAWFORD. Not only by the men, but my superior officers and all of our people—the least thing that happens—and our legal department tells me from time to time; I see the gentleman in charge of it nearly every day; he takes lunch with me nearly every day, and he tells me the things that are on his mind. He will say: "Look here, Crawford, you are having a lot of trouble like this. I got four reports of men stepping on wire nails around the shops. You ought to have your shops cleaned up;" and I do. I am continually in contact with it, and yet this thing did not come up to us as a dangerous proposition.

Mr. RICHARDSON. Is it not, as a practical, common-sense business matter, your desire, as well as your duty, to minimize every element of danger that you can? Is it not money in your pocket?

Mr. CRAWFORD. Absolutely, sir; and I would not stay in my position unless I was trying my level best to do it. I would not remain in the service, and no one else will, when we find it out. That is the main proposition of the maintenance department of a railroad—maintain your equipment in a safe condition.

Mr. RICHARDSON. It is less trouble to you to do that?

Mr. CRAWFORD. Absolutely, sir.

Mr. RICHARDSON. Then you proceed on the same idea that is applicable to all human affairs, that a man is going to do that which is to his pecuniary interest, at least if he knows how?

Mr. CRAWFORD. Yes and no. I proceed on the idea, sir, that engineering knowledge demands that you do certain things—demands that you do it.

Mr. RICHARDSON. And your pecuniary interest?

Mr. CRAWFORD. Yes; if it will not pay its way, it can not be done, because you could not get the money for a thing that will not pay its way, and keep on getting it. For instance, if Mr. Gibbs and myself got some device that would not pay its way the general manager would not give us the next appropriation. We probably would not be there to get the next appropriation, but as long as it pays its way there is no question about it.

Mr. NEALE. I understood you to say that in equipping your engines with that device you were not actuated by any thought of safeguarding human life, that not being in jeopardy, but because you were trying to save expenses?

Mr. CRAWFORD. Yes, sir; just the same as we put cranes in the shops and industrial railways and improved machine tools; just whatever engineering demonstrates is good practice and will pay its way. In fact, that is what the word "engineer" means.

Mr. PAYSON. But, Mr. Crawford, if your attention had been called to the element of danger in connection with it, that would have been a factor in your calculation, would it not?

Mr. CRAWFORD. Just the same as it is now. We would have made an ash pan—we would have tried to make an ash pan that when you opened the hole it would have dumped.

Mr. PAYSON. And simply because you named those two factors you did not include the third because your attention had never been called to it?

Mr. CRAWFORD. From that point of view, no, sir. As near as I can remember, the first self-cleaning, so-called, ash pan I saw was 1890. It is a little older than this bill. About 1890, I think; I would not be positive about that date; I think the first engine that was built under my direction with such an ash pan was built in 1901, and it did not last through the winter, and I had an awfully hard winter for myself and for the railroad.

Mr. RICHARDSON. You do not want to incur the risk of lawsuits, do you?

Mr. CRAWFORD. Absolutely no, sir.

Mr. RICHARDSON. And therefore when an element of danger comes it lays you liable, if an accident occurs, to a lawsuit?

Mr. CRAWFORD. We do not think of that side of it. We think of our personal reputation. It lays me open to criticism as an engineer.

Mr. RICHARDSON. Reputation goes along hand in hand with that, and the business of a railroad, ordinarily conducted as any other business in the country, is conducted looking to its interest, and if a factor of danger appears and you leave it unprotected and somebody gets hurt, then a lawsuit comes up against you and you are shown to be negligent and careless. That prevails in all the walks of life, does it not?

Mr. CRAWFORD. Yes, sir.

Mr. ADAMSON. You do not have anything to do with the legal department, but your crews like to go to town and swear about these things, do they not?

Mr. CRAWFORD. Well, the stove committee, as we call it, assemble around the roundhouse stove at night, and I have frequently joined them, both when I was on the road making tests and firing and things like that, and since I have been in my present position, I find some things out I like to know.

Mr. ADAMSON. They are willing to stop once or twice a year and go to court and swear about the case?

Mr. CRAWFORD. Yes, sir.

Mr. ESCH. Sometimes you get a very good suggestion from a man on the road?

Mr. CRAWFORD. We endeavor to take every advantage of that in our organization. Every man, I am sure, unless he has been employed so recently as not to know the feeling, is invited to give his criticism; every time we design a new locomotive the people who are interested are asked for written criticism—that is, on the division where the engine is operating they are asked for written criticism as to the points on the engine. They are perfectly free to criticize in any way, shape, or form.

Mr. ESCH. Is it possible for a locomotive to move even though the throttle be closed?

Mr. CRAWFORD. If the throttle leaks, yes, sir.

Mr. ESCH. If you have a leaking throttle and the lever is at either end and not on the dead center, it is possible for that locomotive to be moved?

Mr. CRAWFORD. Yes, sir.

Mr. ESCH. And if, therefore, the custom prevails for the fireman to get under such a locomotive and clean it out, there is danger, of course, of an accident?

Mr. CRAWFORD. First, the custom does not prevail for the fireman to get under, because the ash-pit man gets under.

Mr. ESCH. That is true on your road; I will take your statement for it.

Mr. CRAWFORD. I feel this way about it, that we ought not to be compelled to put on our engines some sort of a combination, cast steel or wrought iron, that will not work, because some other railroad puts its fireman under the engine?

Mr. ESCH. If, through legislation, we could bring all roads up to your high standard, would we not be justified in doing it?

Mr. CRAWFORD. Not on their ash pans, sir; because we are still experimenting.

Mr. ESCH. You would want that to be an exception?

Mr. CRAWFORD. We would want that to be an exception, from our best experience.

Mr. HUBBARD. Your standard is not sending firemen under the engine?

Mr. CRAWFORD. Yes, sir; but this law says that no employee must go under an engine and clean an ash pan, and I say that it can not be done; without that it never will be cleaned, because there will be a clinker formed in there unless somebody goes under that engine and cleans it that never will come out.

Mr. WANGER. What is the usual life of an ash pan?

CRAWFORD. Some of these self-cleaners, from the shop to the next terminal; some of the same design a year, perhaps; some of the other designs, the hoe-out pan, with a little patching, I think almost as long as the engine. There is no such thing as an average life of an ash pan, because nobody ever kept a record of it. They last from a few days to a few years.

Mr. RICHARDSON. The ash pan freezes, is the objection you make, it gets icy in there?

Mr. CRAWFORD. Yes, sir.

Mr. RICHARDSON. Does that have any effect on the speed of the engine?

Mr. CRAWFORD. No, not always; but sometimes it does. We had one design of ash pan that had a great effect on the speed of the engine. It practically stopped it, because we could not get any air on the fire. That had two end doors, but had no openings above it to let the air in, and as it finally froze up and the door could not be raised any higher to let any air in, it did what we called "died" on the road. That is a very serious thing.

Mr. FULLER. I want to ask, Mr. Crawford, if you had these pans that could be dumped from the outside or automatically, why would it be necessary to allow this accumulation to form? Could it not be dumped frequently on the road?

Mr. CRAWFORD. Have we to take up all our ballast every few days to take out the ashes?

Mr. FULLER. If it is frozen up, there is no fire in it.

Mr. CRAWFORD. It will not come out when it is frozen up.

Mr. FULLER. Will it not before it gets solid?

Mr. CRAWFORD. No, sir; not unless you stop the engine and punch it, and then you will have to get under the engine to do it.

Mr. RICHARDSON. You say this law forbids a man to get under there?

Mr. CRAWFORD. To get under there and clean the ash pan; that is the thing, but there is no ash pan in existence, and I do not think there ever will be, that will allow that law to be carried out one hundred times out of one hundred.

Mr. ESCH. Supposing we declare that railroad companies shall be required to put on their engines the most practical or approved ash pans, and the same should not be cleaned save in or through the bottoms of ash pits, except in cases of unusual emergency, or something of that kind?

Mr. CRAWFORD. It would not hurt the Pennsylvania Railroad seriously, because our main idea is to do that.

Mr. ADAMSON. Then it might help your business for that law just to say to do just like the Pennsylvania Railroad about those things. [Laughter.]

Mr. CRAWFORD. In answer to that question I will say that our present instructions are practically that—that we do not want the men to go under the engines out on the road.

Mr. ESCH. That is why I inquired as to the prevalence of this custom of putting in ash pits on the different systems of the country.

Mr. CRAWFORD. On the Pennsylvania lines, east and west of Pittsburgh, it is general; on some of the other lines that I have gone over I have seen the ash pits, and I think that as the traffic increases the roads find it to their advantage to put such pits in. I do not know positively, except for the Pennsylvania lines.

STATEMENT OF MR. F. M. WHYTE, GENERAL MECHANICAL ENGINEER OF THE NEW YORK CENTRAL.

Mr. PAULDING. How many years have you been in your present position?

Mr. WHYTE. On the Central approximately eight years. Previous to that on the Chicago and Northwestern; previous to that on the Baltimore and Ohio and the Lake Shore.

Mr. PAULDING. How many years' experience does that cover?

Mr. WHYTE. That is approximately nineteen years.

Mr. PAULDING. Will you describe what your duties are as general mechanical engineer?

Mr. WHYTE. Principally designing.

Mr. PAULDING. Locomotives?

Mr. WHYTE. Locomotives and other equipment.

Mr. PAULDING. Will you not tell the committee, in your own words, your experience with ash pans, automatic and other types; your experience with them principally in designing, using such plans as you have with you to illustrate as you go along, if necessary?

Mr. WHYTE. I know of no ash pan which is automatic, or which is self-cleaning under all conditions, and at the present time I know no way—I feel quite satisfied that there is no way—to make them self-cleaning under all conditions.

As I understand the discussion, there is a difference between the intent and the interpretation. We are concerned with the interpretation of the bill, and as it is interpreted there is only one way to interpret it, as I see it, that no employee will be permitted to go under the locomotive to clean the ash pan. Cleaning does not mean sweeping it up, getting every last piece of out it, it means cleaning it to make it serviceable; and the large part of the coal used is a clinkering coal. The clinkers from above the grates are dumped into the ash pan, and they must be removed from the ash pan at least at short intervals. The interval, of course, depends upon the amount of coal consumed. Those clinkers are larger, but at the same time of much the same nature as those which form in a heater, and a good many of us are acquainted with the clinkers that form in the ordinary house heater. Something has been said about the height of the locomotive. The height is pretty well fixed. We have to get some wheels under it, and the distance between the wheels is pretty well fixed—that is, crosswise to the track.

To make the expense of operating railroads reasonable and to continue the reduction in cost as it has been going on for years, it is necessary to haul that one locomotive as much as possible and to make as fast time as possible. That means burning considerable coal. The length of the fire box is limited by the distance to which a man can throw coal, then to get a certain agreed area to clean only increases the width. To get satisfactory grate surface for the present locomotive we have to carry the fire box out beyond the walls. The height is fixed by certain laws over which we have no control, and in other ways, and we have to go out over the wheels with the ash pan; the bottom of the ash pan sits between the wheels. There is a slope that goes in this way [indicating] which can not be cleaned automatically, or which is so flat that the ashes will not slide on it. On the other hand, we have to put wheels under these, and axles, of course, between the wheels. The axles interfere with the ash pan the other way, so that we can not get slope enough this way, front and back, to slide the ashes to these openings. There is the trouble. I think that in some ash pans which have a hopper bottom the ashes will not slide even in warm weather, and in severe winter weather of course it is much more difficult.

Mr. ESCH. On those upper slopes is not the height of the fire box sufficient to prevent freezing?

Mr. WHYTE. Yes, sir; but the slope is not sufficient to slide the ashes even when they are not frozen.

Mr. ESCH. Even with the jar of an engine?

Mr. WHYTE. They are not jarred when they are being cleaned.

Mr. ESCH. What is the angle of slope?

Mr. WHYTE. That varies. In a freight locomotive, with the driving wheel under the fire box, we can not get so much slope as we can with a passenger engine, where we place the small wheel under the fire box, or, on some of the locomotives, even with a large wheel, we have to place the wheel under the fire box, or the axle, I should say, and the wheels also.

That is the trouble with getting a self-cleaning ash pan—getting slope enough. I presume that if the sides of the ash pan were absolutely vertical and the bottom was up, that would be a self-cleaning ash pan.

Mr. SHERMAN. Mr. Whyte, you have heard what Mr. Crawford stated in the time he occupied. Is the practice upon the New York Central the same as on the Pennsylvania—that is, of cleaning only over pits?

Mr. WHYTE. On the main line; yes, sir. There are some of the branches where the place for cleaning is not closely fixed, depending upon operating conditions, single-track lines, and the locomotive is held on a siding for a considerable length of time, and we can not provide pits at all of those places.

Mr. ESCH. What is the cost of a pit?

Mr. WHYTE. Of course, that would depend upon the length; the width is pretty well fixed, but the length for one locomotive, a satisfactory pit might be \$500.

Mr. ESCH. Cement or brick?

Mr. WHYTE. Either one, I imagine, would be about the same.

Mr. SHERMAN. They are all made with cement nowadays, are they not?

Mr. WHYTE. Largely so.

Mr. SHERMAN. The pit is largely open on one side, is it not?

Mr. WHYTE. It could not be on the main line; it would simply have to be longer than the locomotive and the man go down at the end.

Mr. SHERMAN. It has usually been on the side at terminal points for convenience?

Mr. WHYTE. At the terminal points quite generally; yes, sir.

Mr. PAULDING. Have you had any experience with hopper ash pans or any other sort of ash pan, so called?

Mr. WHYTE. We have what we call "hopper ash pans," a large number of them, the doors of which hoppers are operated outside of the locomotive, but those are not self-clearing or self-cleaning.

Mr. PAULDING. What is the difficulty with them? Why are they not self-clearing?

Mr. WHYTE. On account of these slopes, which are necessary.

Mr. FULLER. How are they cleaned out, these pans you are speaking of now, when the ashes will not slide out?

Mr. WHYTE. They are hoed out and chopped out, anyway to get it out?

Mr. FULLER. From the outside or the inside of the engine?

Mr. WHYTE. Either; both.

Mr. FULLER. Can they be chopped out or hoed out from the outside?

Mr. WHYTE. Or from the inside.

Mr. FULLER. I say generally can they be from the outside?

Mr. WHYTE. No, sir; they can not. The side slopes can be cleaned from the outside, but the in slopes can not be cleaned from the outside.

Mr. PAULDING. Have you recently written a letter to the Interstate Commerce Commission on this subject?

Mr. WHYTE. Yes, sir.

Mr. PAULDING. Have you a copy of that letter with you?

Mr. WHYTE. Yes, sir.

Mr. PAULDING. Will you read it to the committee, please?

Mr. WHYTE. This letter was prepared by me, but it was signed by my superior officer, addressed to the Hon. Edward A. Moseley, secretary of the Interstate Commerce Commission. The letter is dated May 7. It is as follows:

NEW YORK, May 7, 1908.

HON. EDWARD A. MOSELEY,
*Secretary Interstate Commerce Commission,
Washington, D. C.*

DEAR SIR: Your letter of April 17, about the use of self-cleaning ash pans on locomotives, as referred to in Senate bill 6320, has my attention.

Most of the New York Central lines have provided hopper ash pans on the later power, but it is difficult to make the ash pans strictly self-cleaning. On some locomotives a main driving axle and on others a trailing axle must be placed beneath the fire box, and axles so placed interfere more or less with making the bottom of the pan with a slope sufficiently sharp that all the ashes and cinders will slide down when the hopper door is opened. Also it seems to be necessary to place the hoppers between the frames, and in order to get sufficient grate area without making the grates so long that it is impossible to cover properly the front part it is necessary to extend the fire box sidewise outside of the frames, and then it is quite impossible to make the sides with a sufficiently sharp slope to slide the ashes from the extreme sides.

Some locomotives having sufficient room beneath the fire box have recently been equipped with ash pans which have openings in the bottom. The covers or doors of these openings are controlled by levers placed at the sides of the pan, and when those levers are turned the covers or doors for these openings are slipped to one side, such ashes will fall out, do so; but as we have said above, the impossibility of obtaining a sufficient slope for all the ashes to fall out makes it necessary for the pan to subsequently be washed with water from a hose or hoed out. There is no automatic appliance upon the market which would make an ash pan self-cleaning.

Some of the older locomotives having deep fire boxes placed between the frames have the ash pans necessarily so near to the top of rail it would be impossible to equip the pans with hopper bottoms; therefore the ashes must be hoed out.

It would cost about \$100 per locomotive to provide this lever arrangement on locomotives which do not have hopper bottom pans, but which have clearance enough between top of rail and under side of fire box to make possible the use of hopper bottom pans.

The cost of putting these devices on new locomotives on which the devices can be placed satisfactorily is not a serious item, but it would be difficult and in some cases impossible to redesign old locomotives in such a way as to make such devices satisfactory. You will appreciate that it would mean practically rebuilding some locomotives if such requirements are insisted upon.

Usually the ash pan is cleaned when the locomotive is standing over a pit, and then the hoeing out of the ash pan is not hazardous.

Yours, very truly,

J. F. DEEMS,
General Superintendent Motive Power, Rolling Stock, and Machinery.

Mr. RICHARDSON. Were there many accidents occurred by reason of men going under the engines to clean out those pans?

Mr. WHYTE. No, sir, not especially, as I am aware.

Mr. WANGER. Do you personally come in contact with the men?

Mr. WHYTE. Yes, sir. As Mr. Crawford has well said, the men must go under the locomotives. If they did not go under the locomotives to inspect them, the railroad operation would not be safe. They have to go under them to inspect the axles and the wheels and the boxes and the frames and all of those parts; they must go under them.

Mr. SHERMAN. That inspection is always made at a pit, is it not?

Mr. WHYTE. I can hardly say it is always made there. For instance, if we can not get an engine to a pit, and must have the

engine for the train, the inspection would be made outside—that is, in a place other than over a pit.

Mr. SHERMAN. But you have pits at all terminals, do you not?

Mr. WHYTE. We do have; yes, sir.

Mr. SHERMAN. Then, unless you ascertained en route somewhere that something was apparently wrong with the engine, what would be the necessity of making an inspection?

Mr. WHYTE. It is very seldom we get the information en route.

Mr. NEALE. It is only in emergency cases where this inspection is not made over a pit, where some exigency arises requiring quick action.

Mr. SHERMAN. Is an inspection made over a pit except in an emergency?

Mr. WHYTE. Probably not.

Mr. SHERMAN. You were connected with the Northwestern, you say?

Mr. WHYTE. Yes, sir.

Mr. SHERMAN. Was that road supplied with pits quite generally while you were connected with it?

Mr. WHYTE. They were supplied at terminals.

Mr. SHERMAN. Only at terminals?

Mr. WHYTE. Whether intermediate, I could not say.

Mr. SHERMAN. How was it with the Lake Shore?

Mr. WHYTE. The Lake Shore is generally equipped with pits.

STATEMENT OF MR. ALFRED W. GIBBS, GENERAL SUPERINTENDENT OF MOTIVE POWER OF THE PENNSYLVANIA LINE EAST OF PITTSBURG.

Mr. NEALE. How long have you been connected with the Pennsylvania Railroad?

Mr. GIBBS. I came to the Pennsylvania Railroad first in 1879 as an apprentice, but I left the railroad for twelve years and was rail-roading through Virginia, the Carolinas, Georgia, and Alabama, and then came back to it.

Mr. NEALE. You have examined this bill?

Mr. GIBBS. I have.

Mr. NEALE. Will you, in your own words, state what you think as to its practicability and desirability?

Mr. GIBBS. I will not thrash over what the other gentlemen have said, because I agree with them. I have had to deal with the difficulty of hot climates and cold climates. About sixteen years ago we bought engines that had these slides. They did not trouble us freezing up, but every now and then we would hear that somebody was setting fire to the road from one end to the other. Sometimes they would leave the slides open, but there was never any positive evidence that that thing had been left closed. Consequently, the fire claims were pretty voluminous, so that on the Pennsylvania Railroad they put them on about 1881, a great many. The first drawings, I think, date back into the sixties, and they had some 600 engines equipped with these slides, and they did so well that they had to close them up just to keep them from being left open and prevent spreading fire, and I think that happened in a great many

cases. We have a number of engines now. I think we had about 8 per cent of our 4,000 engines that have these bottom arrangements on. They are not adopted yet because we do not know that they are good enough.

Mr. NEALE. Right there, tell us how many engines are under your control?

Mr. GIBBS. About 4,100, and it is a very serious matter, you see, to go through a whole equipment to put on some device, even though it costs only \$100. That is a little too big a scale to try experiments, so that the result is the way we try is we put on 100 or 200 and watch them, and if they go you are justified in doing so. We are considering it, not from the safety standpoint at all; we do not recognize that as being serious, but the economical standpoint, the one Mr. Crawford has mentioned. When a thing becomes dangerous, our lives are deviled out of us by the general manager. He gets a message for every accident, and he O. K.'s and says, "Why don't you do something? It is time for you to get busy;" and I do not think any railroad officer has an easy time on account of these deviling messages.

I have a very large designing department at Altoona. I have a department engaged in making tests of all kinds. We do not want to go ahead and equip the whole railroad with something that we consider a mere experiment. We have spent a very great deal of money in introducing elaborate pits. In one place we have 12 of them side by side, and we have elaborate tunnels under them to get the ashes out of them, and we object very much to having engines cleared except at these places. It burns the ties up and fills the ballast up, and we particularly object to having cinders put in the track, because we have to go over the road and take the ballast out and sift it. So what you call an automatic thing, a man sitting in his cab and getting rid of his ashes, is just what we do not want. It would be better to put in pits and have it done correctly.

Mr. NEALE. Have you ever heard any complaint about the men cleaning these ash pans?

Mr. GIBBS. No; not of that, sir. I get these complaints when these committees go out; they send me back all the proceedings, and I wade through them to see what is wrong with the equipment, and my attention is yet to be called to this thing from any safety standpoint.

Mr. NEALE. You do not think there is any more danger in cleaning out these ash pans than any other operation industrially?

Mr. GIBBS. I would like to call attention to one thing, that there is no operation I know of in connection with transportation that if you do it often enough you will not kill somebody. We have killed people in cleaning ashes. With such an enormous amount of this being done, it would be a marvel if we did not do it, but I think a thing that happens like this, occasionally, is no reason for changing it, no matter what the thing is, no matter how simple the operation is, something will sometimes go wrong and somebody will get killed. I do not know anything that is 100 per cent safe. The very best plans are not always so, and no expenditure, I think, of money will make it, either.

**STATEMENT OF MR. W. P. STEELE, ASSISTANT VICE-PRESIDENT
ENGINEERING DEPARTMENT, AMERICAN LOCOMOTIVE COM-
PANY.**

Mr. NEALE. How many locomotives have you constructed during the last year?

Mr. STEELE. Three thousand, or 2,500.

Mr. NEALE. And what proportion does that stand to the total number of locomotives constructed in this country?

Mr. STEELE. About 68 per cent.

Mr. NEALE. You have examined this bill?

Mr. STEELE. Yes, sir.

Mr. NEALE. Will you state to the committee, as a practical locomotive builder, what you think about it as to its practicability?

Mr. STEELE. I can only speak, of course, from the commercial standpoint. We have given this, as well as any other appliance, a great deal of attention with the view of reducing the cost of operation to our railroad patrons. We have applied a great many different types of pans, the so-called hopper pans, with a view of making them self-cleaning, and we have spent a good deal of time looking the matter up, and I may say that we are not now prepared to guarantee any design of pan, nor do we know of any which would fill the bill and be self-cleaning in all climatic conditions. Of course, the application of a pan of that nature would only apply to engines with a higher fire box. The older type, with the deep fire box, the shallow ash pan, which I presume comprises nearly 20 per cent of the locomotives in this country to-day, and which we are still building for certain roads, this could not be applied.

Mr. FULLER. I want to ask you, in regard to these locomotives that you can not put the hopper on, is it, in your opinion, possible to arrange those boxes so that they can be cleaned from the outside, leaving out the self-dumping and self-cleaning features? In your opinion is it impossible to construct a locomotive with a good pan, so that it can be cleaned out without the necessity of a man going under a locomotive for that purpose, or can it be done?

Mr. STEELE. You speak particularly of the deep fire-box engine with the shallow pan?

Mr. FULLER. I speak of any locomotive. Is it possible to arrange these fire-boxes so that they can be cleaned out without the necessity of a man going underneath the locomotive to do it, leaving out the automatic and self-cleaning features? Say it is cleaned by manual power in some way, and done other than going underneath, is it possible to construct engines and arrange ash pans to do that?

Mr. STEELE. In future-built engines, yes; we might build them so that this so-called hopper pan could be applied, but not to any better advantage than the one we are using now on the same type of engine. In other words, the pan would not be self-cleaning. We could apply the pan with the advantages of perhaps having it operated some little time in the summer months, but we could not change the design on the engine.

Mr. FULLER. Not necessarily taking the hopper pan, but can there not be an arrangement made, or can these pans not be so fixed that they can be cleaned out from the outside without the necessity of a

man going in? I do not mean a hopper pan alone, but as a general proposition is it or is it not possible to construct these locomotives and their pans so that they can be cleaned without the necessity of men going underneath, leaving out the question of what kind of power is used, and clean them just so that a man will not have to go underneath them to clean them?

Mr. STEELE. I do not think it is possible to put such an appliance on every locomotive. Our small engines with the deeper boxes on the sides have the wheels and the brake, and so forth, all in the way.

Mr. FULLER. Could they not be so constructed that it could be done—the new engines?

Mr. STEELE. I have stated that I believe we could build new engines, if acceptable to the railroad companies, within their specifications of weight, and so forth, which they could use. We could build engines on which we could apply pans with these openings, but we know we could not guarantee them to be operated under all climatic conditions.

Mr. FULLER. That is, operated what way, automatically?

Mr. STEELE. That they could be cleaned without a man going under the engines.

Mr. FULLER. You speak of weight. The question of the weight of the engine is a question generally as to what its hauling capacity should be, is it not?

Mr. STEELE. Sometimes; yes, sir.

Mr. FULLER. So that that could be adjusted. An engine does not necessarily have to be a certain weight unless they want it to do a certain amount of work?

Mr. STEELE. The weight and work, of course, go together.

Mr. FULLER. In other words, if a locomotive weighing 115 tons could not be equipped so that a man would not have to go underneath, say, just for example, make a locomotive that weighed 100 tons, or 110 tons, and it might?

Mr. STEELE. We could build the engine that way. On the present engine, already built, it would be a different proposition.

Mr. FULLER. Is it a fact that there are some ash pans now where the dampers are on the sides and the ashes can be hoed out the full length of the pans from the outside?

Mr. STEELE. I have never seen such an appliance.

Mr. FULLER. You never have?

Mr. STEELE. I have seen one or two doors on the side of the pan, but not sufficient to clean the pan the whole length.

Mr. FULLER. Can they not, on some of these old low pans you speak of, tap the pan at the sides, put a hoe or poker in there, and push it out through the end dampers?

Mr. STEELE. I say I do not think that could be arranged for the cleaning of the entire pan from that point, owing to the wheels and other parts of the locomotive which would be in the way.

Mr. FULLER. Are there not some that can be so cleaned?

Mr. STEELE. Possibly there might be some special engines very long between the wheels.

Mr. FULLER. Have you ever seen any engines that that could be done on?

Mr. STEELE. No, sir.

Mr. NEALE. To summarize your statement, as I understand it, from your long experience you know of no self-cleaning ash pan that could be used at all seasons of the year?

Mr. STEELE. That is correct.

Mr. NEALE. What you desire to say is that it is a matter of experiment, something that is sought to be done?

Mr. STEELE. We certainly feel so.

Mr. PAULDING. Does this blueprint which I show you illustrate any of the difficulties in the way of cleaning a pan by the opening at the side?

Mr. STEELE. This print, of course, shows the wheel guard, or the wheel which, I presume, takes up this space on the side of this angle. This must be the wheel guard for the wheel. That would take up about half of that.

(Mr. Steele explained the blueprint to the committee.)

Mr. ADAMSON. What is the usual length of those fire boxes?

Mr. STEELE. About the longest boxes now are 120 inches.

Mr. ADAMSON. Are the ash pans the same length as the fire boxes?

Mr. STEELE. They must be underneath; they have to draw right in.

Mr. ADAMSON. But at the top of that they are as long as the fire-boxes, so that ashes from every part of the fire box will drop in the ash pan?

Mr. STEELE. Yes, sir.

Mr. FULLER. What per cent of locomotives that are now being built and turned out by your works are being equipped with ash pans of this kind which tend to work automatically or do away with the necessity of men going underneath?

Mr. STEELE. I would say our per cent runs between 30 and 40 per cent of the total locomotives turned out; taking perhaps part of one order, we would say 30 or 40 or 50 engines are equipped with some type of a hopper pan which can be opened, with a view of trying it out to see if it is successful. The principal point that comes to our attention is the fact that railroads almost invariably make changes in these prints as they come to us for the next order, which would signify that the device previously furnished was not successful and they are still experimenting with it.

Mr. FULLER. Do you equip any of them with any other pans of this other type not confined to the hopper type? For instance, blow backs and slides, such as that?

Mr. STEELE. There have been cases where we have applied a few blow backs to locomotives for certain road conditions. In my experience traveling around the country I have never known them to use a blow back for cleaning at terminals only to tide the engine over on a long division, and they would blow out enough to keep her clean on the division.

Mr. FULLER. You turn out some of them now, do you?

Mr. STEELE. I do not think we have for a good while, perhaps one or two engines in isolated cases, but if a railroad company were now to use that I hardly think it would pay them to specify it with us, because they could put it on cheaper.

Mr. FULLER. As to the slides we speak of, do you turn out any locomotives with those on?

Mr. STEELE. Not with shallow pans; no, sir.

Mr. FULLER. What is the cost, Mr. Steele, generally speaking, of this blow back and this hopper pan, of equipping the engine with it when it is built?

Mr. STEELE. On the blow back I could not give it to you; the increased cost on the hopper pan is about \$50 an engine. That is, we charge that extra where it is specified.

Mr. FULLER. That is, over another pan?

Mr. STEELE. Over the original price.

Mr. FULLER. What is the total cost of that pan?

Mr. STEELE. That would have to be figured for the special engine.

Mr. FULLER. Generally speaking?

Mr. STEELE. Well, I would not care to give a figure on that, because there are so many conditions to enter into it.

Mr. FULLER. Could you not, as to the size of the engines, give the committee some idea?

Mr. STEELE. No; I could not, because the design or plan and the angles, and so forth, vary so. I think some of the railroad people here, perhaps, who renew these pans, could give more information on that line, of the total cost of the pan.

Mr. FULLER. I want to suggest a couple of amendments to the committee before they adjourn. We suggest, on page 1 of this bill, that we strike out "January," wherever it appears, and insert "July," and on page 1, line 7, strike out the words "automatic self-dumping and self-cleaning." On the same page, beginning in line 14, strike out the same language. It ends with the last word in line 14.

Mr. HUBBARD. The effect of that is simply to require a pan that can be dumped and cleaned without the necessity of a man going under the locomotive?

Mr. FULLER. That is the original idea of the bill.

(Thereupon, at 3.25 o'clock p. m., the committee adjourned.)

BALDWIN LOCOMOTIVE WORKS,
Philadelphia, April 27, 1908.

Mr. EDWARD A. MOSELEY,
Secretary Interstate Commerce Commission, Washington, D. C.

DEAR SIR: We acknowledge due receipt of your letter of April 17, relative to Senate bill No. 6320, introduced by Senator Hemenway, requiring railroads engaged in interstate commerce to equip their locomotives with automatic self-dumping and self-cleaning ash pans, "which can be dumped and cleaned without the necessity of any employee going under such locomotive." We have not seen this bill and have no information respecting it other than that contained in your letter.

Strictly speaking, there is no such thing as an automatic self-dumping and self-cleaning ash pan. All ash pans require outside aid in order to be cleaned. What are called automatic self-dumping ash pans are really not automatic, but require some action on the part of the enginemen to put them into operation. A number of patents have been granted for so-called self-cleaning ash pans. One class of these provides that the bottom of the ash pan shall be made of rocking or tilting slats, like a venetian blind, so that the ashes can be dropped. Another class provides for a system of pipes placed in the bottom of the ash pan and so perforated that jets of steam or compressed air can be blown through them, thus ejecting the entire contents of the ash pan. These devices have been invented and tested many years ago, but none have come into general use.

The principal objections to them are (1), that they are liable to drop fire along the track whilst the locomotive is running, and thus set fire to crossties, and possibly to other structures; and (2), that they involve a considerable degree of complication, involving cost of maintenance and liability of becoming objectionable when out of order.

We are therefore of the opinion that it would be exceedingly unwise to pass any law requiring the use of automatic self-dumping and self-cleaning ash pans. We do, how-

ever, consider it desirable to employ, wherever possible, ash pans which can be dumped and cleaned without the necessity of employees going under the locomotive. The designs and details of locomotives vary so greatly that it is impracticable to use any uniform style of pan in all cases. In many types of locomotives the self-dumping and self-cleaning ash pans above referred to would be impracticable of application. Ash pans are made in a great variety of forms, some of which are easily cleaned and some are not, owing to the obstructions of various other parts of the machinery. We inclose herewith blueprints showing typical forms of construction of ash pans now in use, as follows:

Print No. 3500 shows an ash pan of what is called the hopper type. At the bottom of each hopper is a slide, which is opened from the side of the locomotive by means of a poker. By this means the ash pan is easily emptied without the necessity of anyone going under the engine. This style of pan has been used for a great many years, probably forty or fifty.

Another form of hopper pan is shown on blueprint No. 3703. This also has a slide at the bottom of each hopper, but instead of opening sideways opens longitudinally. Print No. 5627, herewith, shows rigging for this purpose, and a handle at the side of the locomotive operates the shaft which opens the slides. To do this the fireman must stand on the ground alongside of the locomotive.

Another form with the hopper ash pan is shown by print No. 3691. This also has openings at the bottom of each hopper, but in this case they are operated by rigging, as shown on print No. 5898, which opens a cap under each hopper. In this case the operating handle is in the cab, and it is not necessary for the fireman to be on the ground to work it.

Still another form of hopper pan is shown on print No. 3680. Here are three hoppers, each closed by a hinged cap. These three caps are operated simultaneously by the rigging shown on ash-pan slide-work print, No. 5895. This is done by removing the key at "A" and operating the rod by foot, which opens the hoppers. This also is done from the locomotive cab.

In addition to these pans there are many flat-bottom pans, which are made to go under engines having low fire boxes and small driving wheels. In these cases the hopper self-dumping pans, so called, are not applicable. As a representative pan of a large variety of engines of this class we inclose print No. 3273. This pan is made with a large opening each side at "A" and "B." When the side dampers are raised, as shown in red, the ashes can be cleaned out with a scraper from each side of the engine without going underneath. This is true of those classes of engines which have a fire box similar to the sketch herewith.^a

These engines have an overhanging fire box, which is rather close to the rail, so that there is no room to put these dumping pans in, but the desired end is obtained by making these pans with openings at the sides to clean them out, rather than in the front and back. In this way they can be cleaned entirely from the outside. In such cases it is impossible to use the hopper type, nor does it seem necessary. It seems to us that this pan meets with all requirements, and does not subject the operator to any danger.

There have been many ash pans made requiring some one to get underneath the engine in order to clean them out, but it is only in rare cases that such a thing is necessary. Occasionally some special engine, which is very compact and cramped, makes it impossible to apply a really convenient and accessible ash pan. In a large majority of cases, however, ash pans can be improved, and it is desirable to frame a law, not prescribing any special form of ash pan, but simply requiring that the ash pan shall be so made as to be cleaned from the outside in all cases where such a thing is possible.

Very truly, yours,

BURNHAM, WILLIAMS & Co.

St. Louis, Mo., May 5, 1908.

HON. WILLIAM P. HEPBURN,
House of Representatives, Washington, D. C.

I hope your committee will not take any final action on the bill proposing to require railroads to adopt an automatic self dumping and cleaning ash pan without very full consideration and investigation. A bill of this kind would impose a very large and unnecessary additional expense upon the railroads of the country at a time when they are unable to bear the same. I most respectfully request a most thorough investigation before action by your committee, and that the railroads of the country shall be given an opportunity to be fully heard on this subject.

ALEX G. COCHRAN.

^a Omitted in this print.

NEW YORK, NEW HAVEN AND HARTFORD RAILROAD COMPANY,
Washington, D. C., May 6, 1908.

HON. WILLIAM P. HEPBURN,
*Chairman Committee on Interstate and Foreign Commerce,
House of Representatives, Washington, D. C.*

DEAR SIR: I shall not be present at the hearing May 8 on House bill 19795 regarding the use of automatic self-cleaning ash pans on locomotives. I have, however, conferred with the operating officials of our company and am advised that, while there are many devices designed to accomplish the result outlined by the bill, none of them has worked out satisfactorily in actual service. All automatic self-cleaning ash pans so far invented are defective in that there is liability that all of the openings may not be tightly closed after dumping. In this event live coals are scattered along the track and frequently set fire to ties and wooden bridges. The utmost care is now exercised, particularly in dry times, to prevent wooden bridges from catching on fire. It is one of the sources of constant care and anxiety to the operating officials of the company.

If a wooden bridge catches fire, even though it is not consumed between the time when one train passes over it and another one comes upon it, yet it may be weakened by the fire to such an extent as to cause a serious accident. No signal will warn a train of a bridge in such a condition, and this fact makes the small wooden culverts on branch lines a very dangerous part of the roadway.

Furthermore, the time limit set—to wit, January 1, 1909—is entirely too short for practical compliance with the bill, even if it should receive your favorable consideration.

In some cases it would be practically impossible to apply any known device of this kind to the ash pans of many locomotives, owing to their special and peculiar construction. This would necessitate the discarding of these locomotives, although their days of usefulness are not over.

Finally, a device of this nature would cost practically \$60 to apply to such locomotives as were so constructed as to render its application feasible. If applied to the 55,000 locomotives in service in the United States this would cost \$3,300,000, a sum which the railroads with their present earnings could ill afford to spend.

It seems to us that before any bill of this nature receives your favorable consideration the Interstate Commerce Commission should investigate and determine whether there is a practical device in the market, and that the advice of the Commission should be taken as to whether and when such a device ought to be adopted by the railroads. For this reason we trust that the bill will not be favorably reported by your committee.

Very truly, yours,

E. G. BUCKLAND,
Vice-President.

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HEARINGS

BEFORE THE

COMMITTEE ON INTERSTATE AND FOREIGN COMMERCE

OF THE

U.S. HOUSE OF REPRESENTATIVES

ON

H. R. 19795

TO PROMOTE THE SAFETY OF
EMPLOYEES UPON RAILROADS

ASH PAN BILL

VOL. 2

WASHINGTON
GOVERNMENT PRINTING OFFICE

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TO PROMOTE THE SAFETY OF EMPLOYEES UPON RAILROADS

COMMITTEE ON INTERSTATE AND FOREIGN COMMERCE,
HOUSE OF REPRESENTATIVES,
Friday, May 22, 1908.

The subcommittee appointed to consider H. R. 19795 met at 2 o'clock p. m., Hon. Frederick C. Stevens (chairman) in the chair.

Mr. FULLER. Mr. Chairman and members of the committee, these gentlemen come here from different parts of the country to reply particularly to the statements made by those who represented the railroads in opposition to the bill as to the practical application of these appliances that we seek to require in this bill. I would like to call on Mr. Allen first.

STATEMENT OF MR. N. C. ALLEN, GENERAL CHAIRMAN OF THE LOCOMOTIVE FIREMEN OF THE BURLINGTON SYSTEM.

Mr. ALLEN. Gentlemen, my understanding of this ash-pan bill is that the boys want to get some kind of a pan that will relieve them of the danger of going under an engine, and in reading over the statements made by some of the Pennsylvania officials I noticed that they stated that it is not practical to have a pan of that kind. The greater majority of the engines on the Burlington system are equipped with an ash pan that operates from the outside and we are not required to go under an engine to clean the ash pans, not even at terminals, and they work very satisfactorily, and have for a good many years.

Mr. FULLER. How long have you had those pans on there, about?

Mr. ALLEN. They have been making improvements from time to time on these pans. I should think that the first one was started in about 1900, possibly 1902. But all of our new engines as fast as they come out of the shop are equipped with these dumping pans. The company did it because it gave them better service. We have no trouble with hot boxes any more on account of these pans. With the old-style pan the ashes and cinders were so close to the driving axles that we had hot driving axles, but with these new pans, hopper pans, the fire drops away and down.

Mr. STEVENS. Just describe how it works.

Mr. ALLEN. It is pretty hard for me to exactly describe it. I can show you on a picture of an engine. I am not a mechanical engineer, but I have operated the pans and cleaned them a good many times.

Mr. STEVENS. Just tell us from your point of view how it works—just what you have to do.

Mr. ALLEN. The pan has two separate slides or openings, front and back, and it has a door that swings like this and closes up, with a

lever that runs along on the outside. This lever is locked with a pin. All we have to do is to knock the pin out and let the lever drop back and that allows the ashes in this shape. The hopper is a slide about like this [indicating on photograph].

Mr. STEVENS. And that lets the ashes down by gravity?

Mr. ALLEN. They come out of their own force, but with some grades of coal a clinker will form at the bottom of the pan.

Mr. RUSSELL. I was going to ask you if that would discharge the clinkers.

Mr. ALLEN. Then we take what we call the front end poker and just run it in through the drive wheel and start it and it all slides out.

Mr. FULLER. You run that in from the outside?

Mr. ALLEN. Yes; we never think of getting under an engine.

Mr. STEVENS. Does it work well at all times during the year?

Mr. ALLEN. Yes, sir; absolutely. Sometimes a little crust of ice will form around the outside from leaky flues, but we just simply take the shaker bar and jar it like that against the pan through the drive wheel, and it all comes out.

Mr. STEVENS. You do not have to use water or steam, then, in cleaning it?

Mr. ALLEN. Not with this kind of pan.

Mr. ESCH. You mean blow-backs?

Mr. ALLEN. No; this is a hopper pan. Let me give you this a little more extensively. On the lines west of the Missouri River which run through Nebraska, Wyoming, and Colorado we burn a grade of coal out there that makes a great deal of ashes which are very fine, but it hardly ever makes clinkers. We have a pan arrangement there that we dump when we are running along. Some of them operate with a little air lever, and some with a shaker bar which we connect up and just shake it in that manner.

Mr. ESCH. Do not your rules permit you to clean the ash pans on the run?

Mr. ALLEN. No, sir. There are in some places signboards along the road, where there is no danger from fire, some points in South Dakota, in the rocky country—and the signs are up there, large signs, "Dump cinders here," and we dump them in those places.

Mr. FULLER. When the train is running?

Mr. ALLEN. Yes; sometimes 30 or 35 or 40 miles an hour.

Mr. RUSSELL. Can you use this pan at any place on the road?

Mr. ALLEN. On the lines West, where we use this poor grade of coal, we can dump the ashes at any time, providing the rules do not prohibit certain places, bridges and trestles. Of course there are some bridges where we can not dump them.

Mr. RUSSELL. How far is this pan located below the fire box?

Mr. ALLEN. That depends on the style of the engine. In most of our engines the fire box sets above the frame. With the "A" engines—that is, the old-type engine, the standard engine—that pan sets very low, and some of those are used at the present time. They hoe them out with an ash hoe; but those engines are practically extinct; they are going out of business at the rate of 100 a year, and they are not building any of them. Then, again, those they have to clean on the run have a lever that runs up into the cab, which has a pin on it, and you pull this lever and clean it that way.

Speaking about the water, I do not know that we have any pans that we clean out with that spray proposition, but there are some places where they clean the pans at terminals with water pressure with a hose, just simply turning the hose in and washing it out.

Mr. STEVENS. From the outside?

Mr. ALLEN. I would not say altogether; I think the clinker pitmen get in under the engine.

Mr. STEVENS. That would be in the roundhouse?

Mr. ALLEN. At the terminals, yes; not in the roundhouse, but just before they go in there.

Mr. STEVENS. Is this device patented, do you know?

Mr. ALLEN. I hardly think so.

Mr. STEVENS. How long has it been used? I believe you stated at first.

Mr. ALLEN. To my knowledge it has been there ever since I have been there. I went firing in 1897.

Mr. STEVENS. Was it adopted at the instigation of the company itself or of the employees?

Mr. ALLEN. The company.

Mr. STEVENS. On what divisions is it used?

Mr. ALLEN. The entire system.

Mr. STEVENS. North from St. Paul and Minneapolis?

Mr. ALLEN. From St. Paul and Kansas City and up to Billings, with the exception of those I have described, on which they must clean the pan with this poor grade of coal without stopping, and then that is arranged so that it can be dumped from the cab, but I think that is merely an extra connection that is made instead of this lever on the outside of the frame.

Mr. STEVENS. Have you ever heard the motive-power officials or the engineers complain about this not working well?

Mr. ALLEN. On the other hand, I have heard them speak how good it does work, and I want to say we are perfectly satisfied with that grade of pan, because it took the place of pans that we were required to clean by getting under the engine.

Mr. STEVENS. It is put on the newest engines they are ordering and building?

Mr. ALLEN. Yes, sir. They have some of their old switch engines they have had remodeled, and they are putting them on them.

Mr. RUSSELL. Do you know what it would cost to equip an engine with this pan?

Mr. ALLEN. No; I am not in a position to speak correctly on that.

Mr. RUSSELL. Have you somebody here who could tell?

Mr. ALLEN. I have an idea; I do not think the cost could be much, because there is not much to it, it is so simple.

Mr. RUSSELL. What is your best judgment about the cost of equipping an engine with that pan per engine?

Mr. ALLEN. Well, there is one cast piece. I saw a statement of an accident some time ago where an ash pan was torn off entirely, and in the statement of damages, estimated by some of the officers, it seems to me that it was \$62, if I remember rightly. While the pan might not have been entirely destroyed, it was completely torn off.

Mr. STEVENS. Who is the superintendent of motive power on the Burlington?

Mr. ALLEN. We have three. A general superintendent of motive power, Mr. F. H. Clark—

Mr. STEVENS. What is his address?

Mr. ALLEN. Chicago, Ill., 209 Adams street; also F. A. Tory, superintendent of motive power on lines east, same address, and Thomas Root, Lincoln, Nebr., superintendent of motive power on lines west.

Mr. STEVENS. They could give us the details about this; could they not?

Mr. ALLEN. Yes, sir.

Mr. STEVENS. And tell us how it is put on and how it works?

Mr. ALLEN. Yes; they certainly know just what it costs.

Mr. STEVENS. I think this is the most important piece of evidence we have had.

Mr. ALLEN. Mr. Root would know all about the pans, and Mr. Clark, too, of the pans that dump on the run, because that is done entirely on the lines west. As soon as one of those engines comes on the east side of the Missouri River they immediately change it, and it does not take long to change it. It seems satisfactory, because in talking with the master mechanic the other day about this pan he seemed to think that our arrangement was so simple that he ordered one changed.

Mr. STEVENS. Are they used on the locomotives of the fast-mail trains from Chicago west?

Mr. ALLEN. Yes, sir.

Mr. STEVENS. Are they used on the heavy freight trains?

Mr. ALLEN. Yes, sir.

Mr. RUSSELL. Can you give any idea about the frequency of accidents that are caused by an employee having to get under the engine to clean out the pan?

Mr. ALLEN. Well, we have had very few accidents on our line.

Mr. RUSSELL. I mean from your investigation, have you any idea about the number of accidents attributed to that?

Mr. ALLEN. I have never had any occasion to make an investigation. I have been a delegate to our conventions at different times and seen men stand up on the platform and ask for allowances, exhibiting hands and arms and one foot missing, and different things of that kind, but, as I say, we do not have any of those accidents on our line any more, because we have this outside dumping pan.

Mr. FULLER. In other words, you think, then, your pan is such that if all the railroads in the country had a pan that operated like this one you speak of on the Chicago, Burlington and Quincy, they would comply with this bill and there would be no accidents?

Mr. ALLEN. There is absolutely no necessity for a man going under the engine with our ash pans.

Mr. STEVENS. Do you think it could be placed on the engines on the other railroads?

Mr. ALLEN. All of the latest style engines with the wide fire boxes; yes, sir.

Mr. ESCH. Would not the air-brake apparatus interfere with the operation of the ash pan?

Mr. ALLEN. No, sir; that has nothing to do with the ash pan. [Mr. Allen explained a photograph to the committee.] With the old style engines, where the fire box used to drop down 2 or 2½ feet below the frame, there was very little space for any arrangement like these ash pans, but they are building all the boilers on top of the frame now, and there is all kinds of room for ash pans. We have a run of

206 miles, and the ash pan is not cleaned at all. We never clean the ash pans in any of those mail runs from Chicago to Burlington.

Mr. ESCH. Do you use the hopper pan?

Mr. ALLEN. Yes, sir.

Mr. ESCH. Experts who were here the other day, representing the New York Central and the Pennsylvania lines, contended that the slopes of the hopper were not sufficiently steep to allow the ashes to drop down at the base of the pan, even with the jar of the locomotive. Is that true?

Mr. ALLEN. Absolutely no.

Mr. ESCH. There is no trouble, then, of ashes remaining deposited on the upper slopes of a hopper pan?

Mr. ALLEN. The angle of that pan is such that there is not anything that can stick on the side of it.

Mr. ESCH. They claimed that it had to be inclined in order to get over the axle.

Mr. ALLEN. Our pans hang front and back.

Mr. ESCH. No sides?

Mr. ALLEN. They are not going to build any kind of a pan that would lie over the axle; they make any kind of a pan so that the fire will get away from the axle. That is why our people adopted this pan, because it does drop away, and I would like to ask that gentleman, if the slope is not sufficient for the cinders to drop down, how do they expect the coal to come down to the firemen when they build than with half the slope that they do the ash pan? The slides on the back of the tanks are nearly like that [indicating] and they expect the coal to come to us. Otherwise we would have to come 12 feet after it.

Mr. ESCH. There is no trouble about the ashes being solidified by cold upon the upper slopes of the hopper plan? That is too near the fire box, is it not?

Mr. ALLEN. No; there is no trouble at all in that respect. And then, another thing, the biggest part of this pan is large, and is forward, and the fire is dropping, or the ashes are dropping, directly through the grates into the deep part of the pan.

Mr. ESCH. They stated that there were occasions where they had to even get in and chisel it out.

Mr. ALLEN. Out of an ash pan?

Mr. ESCH. Yes; that is what I understood the evidence to be.

Mr. ALLEN. I have been on an engine since 1897 and I have never seen it.

Mr. FULLER. Allow me to ask a question right there to bring this out. Taking the example that Mr. Esch has given, that these ashes accumulate away up next to the grates, in this flat part of the slope, which is not so much of a slope, how could they get in there to chisel that out?

Mr. ALLEN. They would have to take the grates out of the engine and get in through the fire door.

Mr. FULLER. That would not be done on the road?

Mr. ALLEN. I should say not. He is thinking about knocking honeycombs off the flues; he was not talking about ash pans.

Mr. ESCH. He put it in connection with the extreme cold weather, as I recollect his testimony. Is that not your recollection of it, Mr. Fuller?

Mr. FULLER. They said so much that I can not keep track of it all. Now, Mr. Allen, what would you say as to that, if it was based on cold weather? Would not that part of the pan be about the hottest of any of them?

Mr. ALLEN. That is our experience with pans that freeze up, and when it does freeze up it is because of the engine leaking, but by taking the shaker bar and bumping through the wall that fire drops down and that helps us.

Mr. FULLER. They testified, or the New York Central representatives did, that these ashes sometimes stuck on the side of the pan because of there not being slope enough, and they were asked the question if, in such cases, even if they did stick, if they could not be drawn down from the outside rather than a man getting underneath. What would you say as to that, in case the ashes did stick in this pan you have on the Burlington? Could you knock them out from the outside?

Mr. ALLEN. You could not get our firemen to go under an engine and clean an ash pan.

Mr. FULLER. Are there openings where you could put a poker in and knock them out if they did stick?

Mr. ALLEN. The entire top of the pan is suspended from 3 to 4 inches, and that is an open air space, the entire bottom of the boiler or water leg; that is to let air in there. They have to have air to properly burn the fire, and there is plenty of room there for you to work a poker in at any time.

Mr. FULLER. You would work a poker in and knock the ashes down; your poker would go in above them, would it?

Mr. ALLEN. We never have occasion to have to knock any ashes down.

Mr. FULLER. If they stick to the slope of the pan?

Mr. ALLEN. You can do it, yes.

Mr. FULLER. In such an event you put the poker in over the ashes?

Mr. ALLEN. Yes, sir.

Mr. FULLER. And poke them down from the top?

Mr. ALLEN. Yes.

Mr. STEVENS. What other roads do you know use pans of this kind?

Mr. ALLEN. I do not know; I am not in a position to say what other railroads do it.

Mr. FULLER. Before Mr. Allen quits, Mr. Chairman, I want him to state to the committee what his position is and as to what knowledge he has of the general workings of these pans all over the Chicago, Burlington and Quincy system.

Mr. ALLEN. My position is that of general chairman, or, in other words, the "chief griever."

Mr. FULLER. You are a locomotive engineer, as I understand it?

Mr. ALLEN. I would be if I was working.

Mr. FULLER. You have had practical experience as a locomotive fireman or engineer?

Mr. ALLEN. I fired an engine eight years and I was an engineer for nearly two years.

Mr. STEVENS. And you travel over the Burlington road?

Mr. ALLEN. I spend my entire time looking after the interests of the firemen.

Mr. FULLER. While you were so employed on the Chicago, Burlington and Quincy, did they have these pans and did you have practical experience with them?

Mr. ALLEN. Yes, sir.

Mr. FULLER. I wish you would tell the committee what your observations are now, and if you have a general observation of these pans over the system, how you have it, through what means?

Mr. ALLEN. The fireman is held accountable for his failure to keep an engine hot, and of course we try to furnish an excuse why the fireman did not keep the engine hot, and it is generally a poor grade of coal or something the matter with the engine, and we keep ourselves pretty well posted on the way engines are working and the work that the roundhouse forces do on the engines, so as to be in a position to put the blame where it belongs.

Mr. FULLER. I mean your position with relation to the men and the company. As I understand, you are general chairman of your organization on the Chicago, Burlington and Quincy system?

Mr. ALLEN. Yes, sir.

Mr. FULLER. Does that bring you in contact with the men all over the system by virtue of being the chairman, and are you in a position to be continually in touch with these things?

Mr. ALLEN. Yes, sir; you might say personally acquainted with every fireman on the road and most every engineer; that is, in coming in contact with them on the road and riding with them and in their lodge rooms, and I am always having business with the officers of the railroad company.

Mr. FULLER. Testimony has been given here that these hopper pans, because of their construction, permit air to come in through the bottom and overheat the pan, causing the pan to warp; what would you say as to that from a practical standpoint?

Mr. ALLEN. We never have any trouble of that kind with ours.

Mr. FULLER. For instance, there were holes in the bottom of a hopper pan and a lot of ashes on it, and there were openings such as you have described at the top of this pan. You say this pan is suspended by bolts?

Mr. ALLEN. Yes, and we are screening in certain times of the year; when the western prairies are very dry, they put a wire screen around that.

Mr. FULLER. Would the engine get sufficient draft from these openings above the line of the ashes to not make such a draft on the bottom of the pan as to draw the air through those ashes?

Mr. ALLEN. That is all the air they get, on the bottom of the mud ring.

Mr. FULLER. You mean by the bottom of the mud ring the top of the pan?

Mr. ALLEN. Yes, sir.

Mr. FULLER. And what would be your answer to that statement, in a general way, that they made here, that the air comes through the bottom of the pans, in these automatic dumping pans, and keeps the fire alive in the ash pans, so that it warps the bottom of the pan so that it will not work.

Mr. ALLEN. Our pans are absolutely air-tight; that is, as air-tight as they can be made. There is no air comes through them. You can dump a fire from one of our pans, and we often do it, dump one

section of the grates, going down a grade some place, and letting the fire stay in the ash pan until we get to a place where we can clean it.

Mr. STEVENS. Does that not burn or warp the pan?

Mr. ALLEN. I have never seen one that was warped.

Mr. STEVENS. Have you ever heard of any?

Mr. ALLEN. They used to have a pan, before they got this last one, that warped, but they built a false work inside, allowing the passage of air around that, and stopped a good deal of that. [Mr. Allen explained a blueprint to the committee.]

Mr. ESCH. Do you have ash pits at all division terminal points; that is, on the line of travel?

Mr. ALLEN. Lowered, you mean?

Mr. ESCH. Yes.

Mr. ALLEN. Yes, sir.

Mr. ESCH. What are the rules of your road with reference to the use of the pits and the emptying of ash pans?

Mr. ALLEN. There is no special rule for that, except we must be very careful where we dump our ashes, and the roundhouse force handles that, though, at the terminals. But on some of our tracks, where the runs are long, they have, at the end of the sidetrack, a place covered with old iron, or ties, or something, and we dump our ashes there. This is entirely on the lines, as I say, west that we dump them on the fly.

Mr. ESCH. That, however, would not obtain on any eastern roads?

Mr. ALLEN. Not on our line. It could be done, but they do not have to do it.

Mr. ESCH. Would it not be a rather ruinous policy to dump ashes en route on account of burning ties, or something of that kind, or destroying the ballast? Are not ashes always gotten out of the ballast? They help to hold water and thus help to rot the ties?

Mr. ALLEN. The best drained roadbed in this country is cinders.

Mr. ESCH. Mixed up with the ordinary ballast?

Mr. ALLEN. When they want to make a good roadbed, where they have bad track—I do not know that I ought to get on to the roadbed in this, I am not a road man—but I know cinders will drain water quicker than anything.

Mr. ESCH. I make that point because I recollect the testimony of one of the witnesses to be that railroads did not want ashes dumped on the ballast.

Mr. ALLEN. They dump sand in making a new road, and if they can get cinders they let them get settled down and put gravel on top of that, and cinders is the best drain there is, and in the ditches that they build along the right of way they always cover the top with cinders, because it carries the water away immediately, and there are a great many miles of our road ballasted with cinders, and it is a mighty good roadbed.

Mr. ESCH. The testimony also shows that it is necessary to examine the bottoms of engines almost daily and notice whether there are loose bolts or fittings or gearings and everything of that kind, and possibly in some cases for oiling. Is that a dangerous operation?

Mr. ALLEN. Our ash pans are entirely back of all running gear or the machinery; there is nothing to oil anywhere near an ash pan except a rear driving box.

Mr. ESCH. But the point is that a man under an engine looking for defective bolts, bars, and so on, would be in just as dangerous a position as a man dumping an ash pan.

Mr. ALLEN. Oh, you mean the inspector?

Mr. ESCH. Yes.

Mr. ALLEN. The inspector never goes under an engine except in the roundhouse, and the pit is deep enough for him to stand up.

Mr. ESCH. There is never such an inspection on the road?

Mr. ALLEN. There may be railroads that require it, but our men go under the engines when they are over the pit or they do not go under them. If you broke down on the road, that is an emergency case, and you would have to go under it.

STATEMENT OF MR. R. B. ACKERMAN, OF GALION, OHIO, LOCOMOTIVE ENGINEER ON THE ERIE RAILROAD.

Mr. STEVENS. How long have you been an engineer?

Mr. ACKERMAN. Since 1904.

Mr. STEVENS. Were you a fireman before that?

Mr. ACKERMAN. Yes, sir; eight years.

Mr. STEVENS. So you have twelve years' experience on a locomotive on the road?

Mr. ACKERMAN. Yes, sir; twelve years' experience.

Mr. STEVENS. Now, please tell your story.

Mr. ACKERMAN. Well, gentlemen of the committee, I can say, in behalf of this bill, that we have on the Erie Railroad the hopper pan, and they have worked satisfactorily, and the change was made from the old pan to this pan without any great effort on the part of the men; the company seemed to realize that it was the proper pan to have. We have had that pan, I will say, since 1904, anyhow, perhaps before that, but I just call to mind when the "Mother Hubbard" engines came to our division, they came with that pan on, and the pan is so constructed that when the grates are moved the ashes fall right to the bottom of the pan, and the slides on that pan, or on the hopper, rather, consist of heavy cast, and there is one comes in there from that way [indicating on photograph], and fits up there, makes a joint; and we used to have pans that worked by a lever from the cast, but the men did not like those very well, they did not approve of them, so we suggested to the company that they put on these slides. There were a great many of the boys who would thoughtlessly catch hold of that lever there, thinking that they had hold of the grate lever, going to shake the grate, and they would have hold of the dump, so they have taken that off and put these slides on, as I have stated, and furnished a long steel bar with a hook on it and a handle; that is up on the tank, and when you come to a place where you wish to dump your pan or a place to clean the pan, you just take that hook and slip off the engine, and it only takes two or three minutes' work to take the slides out, dump it once or twice, and your pan is clean.

Mr. STEVENS. Will that work in cold weather?

Mr. ACKERMAN. Yes, sir.

Mr. FULLER. You do this from the outside?

Mr. ACKERMAN. Oh, yes; from the outside. We have no engines that are equipped with a hoe pan. The company has eliminated the hoe pan, with the exception, I might say, of a few of our old standard

engines that ran years ago, but we very seldom use those any more; only in case of emergency or a switch, or something of that kind. Then they did not require the men to go under those engines, because it is just a short distance. In regard to freezing, I have never, in my experience, had any trouble, neither have I heard any of the men complain. I put through one of the worst winters that any railroad man ever experienced, and that was during the boilermakers' strike on the Erie Railroad. We had those hopper pans, and had to clean them, and our engines leaked, and I never experienced any trouble; get down there and bump the slide once or twice and they open readily, and there might have been a little crust of ice formed around the bottom of the pan or around the sides, but it can not be to a very great depth, when it would freeze, because you would have the warm cinders on top of it; so there is no trouble, as I said, experienced, neither have I heard the men say they had any trouble in regard to freezing up. In regard to warping, this cast warping, I have never seen any of them warp.

Mr. STEVENS. When did you say these were put on the locomotives of the Erie?

Mr. ACKERMAN. As far as I can remember, the first came to the Erie, that is, to our division—

Mr. STEVENS. Which division?

Mr. ACKERMAN. This is the Cincinnati division—all I can recollect came there when the "Mother Hubbard" type of engines came there.

Mr. STEVENS. When was that?

Mr. ACKERMAN. That, I think, was in 1904. They might have come there, possibly, before that.

Mr. STEVENS. What has been the expression of the engineers and the firemen and the officials of the road? Have you ever heard any complaints about the ash pans?

Mr. ACKERMAN. As far as the men are concerned, when we talk this matter over, they say it is the best thing they ever had; they would not go back to the hoe pan and take the chances that we have taken before.

Mr. STEVENS. Have you ever heard any of the officials talk about it?

Mr. ACKERMAN. Just prior to coming away I heard several of the officials say that the pan was giving satisfaction.

Mr. STEVENS. Did you ever hear any of them complain about it?

Mr. ACKERMAN. No, sir; I have not heard any of them complain. On the other hand, they say it is just what is wanted.

Mr. STEVENS. Who is the superintendent of motive power on your division of the Erie?

Mr. ACKERMAN. We only have one superintendent of motive power who covers the entire system, Mr. Rumney.

Mr. STEVENS. Where is he located?

Mr. ACKERMAN. In New York.

Mr. RUSSELL. Under the old system, what was the cause of the accidents that happened, the most frequent cause, in going under the engine and cleaning it; was it because the engine would be moved?

Mr. ACKERMAN. A man will get under his engine to hoe out the pan; perhaps he would say to the engineer that that was where he was going, but there would be some mistake in signals, or thoughtlessly the engine would be moved, the cars would be kicked in from

the rear. I saw a man caught in that way, at one of our conventions. He was caught just as he got his right arm out, and the wheel ran across him there and they tried to knit that together by wire. He still had that arm hanging on there. He just had his arm caught and then the engine was stopped.

On our division we had a man who went under his engine to hoe the pan, and it was a long, tedious job, and I suppose the engineer thought he was out—he never said anything, he never came out plain and said anything about it, the men very seldom do that—but he was dragged the entire length of that pit and right over the live coals and lay right in the hot coals, but, as luck had it, he happened to get both arms over the journal and he did not have any bones broken. His knees were bruised, and if it had been where the ground had been hard, or on ties, it would have broken his bones, but dragging over those soft cinders, there was a place where he would not have bones broken.

Mr. ESCH. If you were twelve years on the Erie you must have run across a great many locomotives used on the Pennsylvania and New York Central.

Mr. ACKERMAN. Yes, sir. I was going to add in my remarks that we ran parallel with the Pennsylvania and the New York Central. They have the same equipment we have.

Mr. ESCH. And you have had no trouble with your type of ash pan?

Mr. ACKERMAN. No, sir; we have not, and they have the same class of an engine.

Mr. STEVENS. Are there many of your locomotives not equipped with ash pans?

Mr. ACKERMAN. For my division I can say that there are not half a dozen, and they are of this type I have stated to you. The rest have the hopper pan.

Mr. STEVENS. How much would it cost to equip a locomotive with the hopper pan?

Mr. ACKERMAN. I could not say as to the actual cost, but the hopper is so small that I do not think it would cost a great deal. Figuring the cost of steel and the labor to put it up is about all of the cost that it would be. If the Erie did not take an interest in those pans, they certainly would not be taking off good pans and placing them on.

Mr. FULLER. You mean good pans of the old type?

Mr. ACKERMAN. Good pans of the old type. There was an engine just turned out of the shop shortly before I came away, an engine that could not be equipped with a hopper pan; they claimed that the distance would not allow them to do it.

Mr. FULLER. That is, the firebox was such a distance from the rail?

Mr. ACKERMAN. The distance from the mud ring to the rail or to the ground. The pan can hang an inch below the rail. They have this engine equipped with the pan. I noticed her in particular; they are going to run her on a passenger train there.

Mr. STEVENS. Does it work all right?

Mr. ACKERMAN. It works all right, gives satisfaction, and, another thing, on that class of engine, which is a 10-wheel connected engine, this hopper avoids the journal, the hopper goes down in between the journal, the slant goes right over the inside of the journal, and that

avoids all heat getting around the journal there from the cinders; they drop right to the bottom of the pan or hopper.

Mr. FULLER. What would you say, Mr. Ackerman, as to the statement made here by representatives of the Pennsylvania Railroad that because of holes in the bottom of the pan, as a result of this style of a pan—this hopper pan, a pan which can be cleaned without a man going underneath—air was drawn through by the draft of the locomotive and overheated the stuff in the ash pan so as to warp the bottom of it; what is your opinion of that from a practical standpoint?

Mr. ACKERMAN. My opinion of that would be that if there was sufficient air that would come from the bottom of the pan, the pans being constructed as they are, with an air space between the top of the pan and the leg of the boiler, she would get sufficient air from the air space to keep those cinders on fire, and I have never seen a pan yet in my experience where there was air that would get up from the bottom. Our officials make an effort, if the pan wears out around the rivets, or anything like that, to see that those air holes are kept closed. It interferes with the proper amount of air that the engine should get through the proper channels. As soon as there is a rivet works loose, they will replace it and keep the bottom of the hopper tight, if possible.

Mr. FULLER. You have read this bill, H. R. 17975?

Mr. ACKERMAN. Yes, sir.

Mr. FULLER. If we strike out the words "automatic, self-dumping, and self-cleaning," in sections 1 and 2, do you think, from a practical standpoint, that such a law could be complied with?

Mr. ACKERMAN. I do not see why it could not.

Mr. FULLER. Do you think it could?

Mr. ACKERMAN. I think it could; yes, sir.

Mr. ESCH. It would not put a hardship on your road, if you are already supplied with a hopper pan?

Mr. ACKERMAN. No; I should not think it would; we have the hopper pan there, and as fast as the engines are coming out they are placed on them.

Mr. FULLER. Do you not have cold weather through the country where the engines run that you speak of?

Mr. ACKERMAN. The thermometer is down to 10 and 12 and 15 below.

Mr. FULLER. What part of the country is that in?

Mr. ACKERMAN. I am 60 miles north of Columbus and about the same distance south of Cleveland, right in that part.

Mr. ESCH. Does your road encourage men in the operating department to bring complaints regarding imperfect mechanism or encourage you to make suggestions as to improvement of any appliances you have to operate?

Mr. ACKERMAN. Our superintendents and road foremen, especially, have asked the men if they note any defects in the equipment, if we could not get to see them, to make a report of it on the work book.

Mr. ESCH. Prior to 1904, when you got this ash pan, were criticisms made of the then existing ash pans and reported?

Mr. ACKERMAN. Do you mean among the men?

Mr. ESCH. Yes.

Mr. ACKERMAN. I have often heard a man remark, "I have laid on my belly so long at this point and that point and got wet hoeing that pan," and the boys talk of it quite frequently.

Mr. ESCH. At least the defect of that appliance was brought to the knowledge of the operating officials of the railroad?

Mr. ACKERMAN. Oh, yes; that was no doubt brought to the operating officials of the road through the men.

Mr. FULLER. What do you say, Mr. Ackerman, as to this appliance being a time saver and a money saver?

Mr. ACKERMAN. I will say that you can clean two of those pans while you are hoeing one of the old type—a half a dozen of them, I will say.

Mr. ESCH. Is it possible for a locomotive, owing, for instance, to a leaky valve, and the lever being at either end, to move?

Mr. ACKERMAN. Leaky throttle valve, you mean?

Mr. ESCH. Yes.

Mr. ACKERMAN. The lever being at either end?

Mr. ESCH. Yes; that is, so that there are open ports.

Mr. ACKERMAN. Certainly; the engine would move.

Mr. ESCH. Does a leaky valve sometimes move a locomotive when there is no one there? Is it possible?

Mr. ACKERMAN. Yes.

Mr. ESCH. That would be an element of danger in case men were required to go under engines to clean out ash pans?

Mr. ACKERMAN. It would to the extent if the men were not cautious. If they know they have a leaky valve and they will block their engine or set their brakes, it could not move.

Mr. ESCH. Of course that defect would be remedied as soon as you got to the end of the run?

Mr. ACKERMAN. That defect would be remedied if it was reported; yes, sir. If men are cautious, as they should be in cases of that kind, if they get under an engine, they should block their wheels or set the brakes if they know they have a leaky throttle valve.

Mr. ESCH. With a new type of engine and cab the engineer can not always see the fireman—that is, he is on the opposite side of the boiler and the boiler is in between?

Mr. ACKERMAN. We had engines of that class, but the engines that we have to-day on our division there are so constructed that you can see at all times.

Mr. ESCH. You do not use that type?

Mr. ACKERMAN. No; they have abolished the "Mother Hubbard" type.

Mr. FULLER. Did they put them on some other part of the road or do away with them entirely?

Mr. ACKERMAN. There were some of them working in New York State, a few of them, but they are remodeling them as fast as they go through the shop, making single-cab engines of them.

Mr. FULLER. I want to ask Mr. Allen another question. What parts of the country do these locomotives that have these pans run through?

Mr. ALLEN. They go clear to Billings, Mont., and Deadwood, S. Dak. Do you mean in the cold district?

Mr. FULLER. Yes.

Mr. ALLEN. Billings and St. Paul are the northern points.

Mr. FULLER. You have read this bill, 19795?

Mr. ALLEN. Yes, sir.

Mr. FULLER. With these words stricken out of sections 1 and 2, "automatic self-dumping and self-cleaning," do you think that it is a practical thing for railroads to comply with such a law as that?

Mr. ALLEN. Yes, sir. Not only do I think so, but 1,600 firemen that I represent wanted me to do all I could to get the bill passed, and they are willing to have that self-dumping and self-cleaning stricken out, because they are perfectly satisfied with what they have, and they realize that our company have done everything they could, and all we have to do is to take these things up ourselves and go to the management and say what is wrong, and they fix it for us. We do not have any trouble with anything of this kind. Yes, they are very much in favor of the bill on account of their brotherly love for some poor fellow on some road where the management will not do anything for him.

STATEMENT OF MR. C. A. LOFLIN.

Mr. STEVENS. Where do you live?

Mr. LOFLIN. Atlanta, Ga.

Mr. STEVENS. What is your business?

Mr. LOFLIN. I am an engineer.

Mr. STEVENS. How long have you been an engineer?

Mr. LOFLIN. One year and a half.

Mr. STEVENS. On what line?

Mr. LOFLIN. Southern Railway.

Mr. STEVENS. What was your business before you were an engineer?

Mr. LOFLIN. A fireman.

Mr. STEVENS. How long?

Mr. LOFLIN. Two years and three months, prior to running an engine.

Mr. STEVENS. So you have been about five years on an engine?

Mr. LOFLIN. Yes, sir.

Mr. STEVENS. Tell us what you know about this ash-pan business.

Mr. LOFLIN. When I went there we had the old-fashioned hoe ash pan, were burning a better grade of fuel than we are at present. When we commenced burning the sorry fuel, we had a great deal of trouble making schedules with the engines with shallow pans, and the company would ask us why we could not make the schedules and we would tell them that the pans were bad. They put the blow back on a few of them as an experiment, and they were a success as a time saver and labor saver and getting over the road, so they have put them on practically all of those small engines.

Mr. STEVENS. Have they not put them on the large ones?

Mr. LOFLIN. No, sir.

Mr. STEVENS. Why not?

Mr. LOFLIN. You can run a few miles before having to stop to clean those, and they just put them on those that they were necessarily compelled to; they had to make the schedules. They put them on those for a necessity.

Mr. STEVENS. They have not tried the hopper pan?

Mr. LOFLIN. No. I ran parallel by a road, the W. and O. division of the Nashville, Chattanooga and St. Louis, where they use that successfully. There are places along the track where there is no danger of fire, and they put up signboards, "Dump here."

Mr. FULLER. Then do they have men to clean along the track?

Mr. LOFLIN. The section men, if the track gets too full, go along and clean them off, but there is plenty room to dump, and I have looked at the engines often and I have seen the men dumping while they were running.

Mr. FULLER. Explain what these blow backs are.

Mr. LOFLIN. They are successful. They work from the inside of the cab. There is a little lever and the pipe that goes from the boiler head around and into the front of the pan. You have a separate lever, a small lever, that raises up the back damper, and you take that down, and it blows it all back.

Mr. FULLER. The steam does?

Mr. LOFLIN. Yes, sir. I have run those engines myself and fired them myself and know what it is.

Mr. FULLER. They can be dumped that way and cleaned that way when the engine is standing on the road?

Mr. LOFLIN. Yes; when they get into the terminals they do not have to have any men go under those. The man who shakes the fire down works that valve for a second or two, and it blows it all out.

Mr. FULLER. Then it could be dumped at such places as you speak of that they had on this other road, where they had such places to clean the ash pan?

Mr. LOFLIN. Certain places to clean the ash pans. The only restrictions are on bridges and trestles.

Mr. FULLER. But it could be arranged to dump them through this blow back at certain points just the same as it could with any other pan?

Mr. LOFLIN. Yes, sir.

Mr. FULLER. So that the question of it filling up the ballast here and there all over the road could be avoided by having certain places to blow them out?

Mr. LOFLIN. Yes, that could be overcome. With us they use the cinders for ballast a good deal, so of course it does not interfere with us.

Mr. FULLER. What is your experience with these blow backs as to their freezing up or setting fire to things?

Mr. LOFLIN. There has never been any fire laid to our blow backs, nor have we had any trouble with freezing. My country is not as cold as some, yet it gets pretty chilly.

Mr. FULLER. You have worked on the engines on which they are used?

Mr. LOFLIN. Yes, sir.

Mr. ESCH. What does it cost to equip an engine with a blow back?

Mr. LOFLIN. I should not suppose over \$5; it is very simple.

Mr. ESCH. Could you use the compressed air?

Mr. LOFLIN. Yes, sir; we use the compressed air—anything that would create a pressure to blow it back.

Mr. ESCH. You could connect with your air tank on the engine?

Mr. LOFLIN. Yes, sir.

Mr. FULLER. How much pressure on a locomotive do you have to have?

Mr. LOFLIN. I worked them with 70 pounds.

Mr. FULLER. How much air would you say your air pump pumps up?

Mr. LOFLIN. We usually carry 90 pounds on the reservoir on freight trains, and on passenger trains we carry 110 to 120.

Mr. FULLER. Would not 90 pounds of air work that blow back as good as 70 pounds of steam?

Mr. LOFLIN. Yes, sir.

Mr. FULLER. Is it possible to have an air drum separate from the regular air drum that they use for the brakes? Could they have an air drum to store away air for this purpose?

Mr. LOFLIN. You could have a larger main reservoir for the use of the blow back. You would have to have it connected with the pump to keep the pressure up.

Mr. FULLER. Now, you have looked at this bill, 19795?

Mr. LOFLIN. Yes, sir.

Mr. FULLER. By striking out the words "automatic self-dumping and self-cleaning," in sections 1 and 2, do you think it is practical for railroads to live up to such a law as that?

Mr. LOFLIN. I think it is.

Mr. FULLER. You say you have never had any of these blow backs freeze up?

Mr. LOFLIN. No, sir; I do not recollect hearing anyone speak of one freezing up at all.

Mr. FULLER. What is the opinion of the men on this other road you speak of of these hopper pans?

Mr. LOFLIN. They are very much pleased with them—say they never give them any trouble at all.

Mr. ESCH. Is there an advantage in using steam in the blow back instead of air, in this, that the steam would put out the cinders?

Mr. LOFLIN. Yes, sir.

Mr. ESCH. And lessen the danger of fire?

Mr. LOFLIN. Yes, sir; a great deal. Another thing: It dampens the ashes and so, of course, makes less dust and does not annoy the passengers.

Mr. FULLER. Could you turn water into the ash pan and drown the fire out and then take the ashes out? Is the pressure sufficient to do that with your blow back?

Mr. LOFLIN. Yes, sir.

Mr. FULLER. Could you pull up to a place and stop and do that and then go on?

Mr. LOFLIN. Yes, sir.

Mr. FULLER. There would be no necessity for filling the ballast up with ashes?

Mr. LOFLIN. No, sir.

Mr. ESCH. How often do you have to clean out an ash pan in an engine that is in constant use?

Mr. LOFLIN. It depends altogether on the grade of fuel. With the fuel we use, with these large, deep engines, we clean them out with some grades of fuel about every 30 or 40 miles. On the small engines you have to clean them out every 10 miles.

Mr. ESCH. In your five years' experience have you known of men being injured by getting under the engine?

Mr. LOFLIN. Yes, sir; I have known several to be injured, but none killed. I know of a man who was under the engine hoeing out the ash pan and he told the engineer he was under there. It was on a sidetrack, the meeting point for passenger trains, and a train came up behind him and pushed the train up.

Mr. STEVENS. Where was that?

Mr. LOFLIN. That was at a little siding on the division I am on, at Shannon. The man did not have any bones broken or he was not killed, but he was mashed and bruised. He lost a month or two from work.

Mr. STEVENS. When was that?

Mr. LOFLIN. I can not give the exact date; it has been some time in the past twelve months. These other men that I speak of on that Nashville, Chattanooga and St. Louis, they are much pleased with the hopper pan they have, and say it is working successfully. It is worked from the cab.

STATEMENT OF MR. R. C. DUNLAP.

Mr. STEVENS. Please state where you live and what your business is.

Mr. DUNLAP. Palestine, Tex.; employed as an engineer, on the International and Great Northern Railroad, and I have been in the service about seven years, one year as a locomotive engineer and the others as fireman. We have a hopper, or slide pan, as it is called, that dumps from the outside, and it is absolutely a success. It is not necessary to go under the engine on any occasion to clean the pan. I have never known of it being necessary to go underneath to clean the pan at all. While we are not troubled with extreme cold weather, the pan operates satisfactorily at all times, and the point of the pan burning, our pans are equipped with air from the top; it lets down about 6 inches from the mud ring at the top of the pan, and it is equipped with nettings and mesh netting is placed there. [Mr. Dunlap explained a picture to the committee.]

Mr. RUSSELL. Does the International and Great Northern usually use any oil burners there?

Mr. DUNLAP. No, sir; we use three on the Galveston section. We were equipped with oil burners entirely at one time, but we are using coal now, except three engines at work on the Galveston section.

Mr. ESCH. Do you use the blow back on your line at all?

Mr. DUNLAP. No, sir; we have the pumps on all of our engines, except a few little passenger engines on short runs, and they are cleaned at the terminals, if they are required to be cleaned. I suppose there are 10 or 12 of them.

Mr. STEVENS. Have you ever heard any complaints about those pumps not working well?

Mr. DUNLAP. No, sir. I say if a pan does not work well it is absolutely because of negligence on the part of the operators. The enginemen will become negligent and allow them to fill up, just trying to make over a 145-mile division without drawing it at all, on a freight train, and it might get full and cause the grates to burn out; but, as I say, that would be the same thing in connection with

any other appliance—not the fault of the appliance at all; it would be the fault of the operator.

Mr. STEVENS. Who is the superintendent of motive power on your road?

Mr. DUNLAP. Mr. G. N. Enright, the superintendent of machinery, who has charge of that.

Mr. STEVENS. Where is he located?

Mr. DUNLAP. At Palestine.

Mr. STEVENS. Did the company introduce these pans of their own accord, or was it requested by the men?

Mr. DUNLAP. I am not prepared to say. The pans were there long before I went there, in 1901, and while I had a little talk with the boiler maker who was there when the pans were introduced, I did not ask him who was the instigator of the pan, and I really do not know. The pan has been in operation, though, so long that the men were not thinking about it at all when I went there, not thinking about the hoe pan. The engines were all equipped, except a few very small engines on a little short passenger line.

Mr. FULLER. I want to ask you if you travel around much among the firemen on your road?

Mr. DUNLAP. Yes, sir; I am the general chairman for the firemen on our line, and it is my duty, as general chairman, to visit every point of interest on our system, and I do, at different intervals, go to each place, at every point on the road, and examine and take charge of such evils as might be thrust upon the men from any cause. That is my duty; I am paid for that purpose, to go from terminal to terminal and from point to point where such things exist as would be detrimental to the men.

Mr. FULLER. Are you in touch with the conditions all over the road regarding the ash-pan question?

Mr. DUNLAP. Entirely, sir; yes, sir; absolutely in touch with every condition on the road.

Mr. FULLER. You speak, then, as I understand it, not from your own experience, but from general understanding.

Mr. DUNLAP. From general observation through meeting all the men.

Mr. FULLER. Through your duties?

Mr. DUNLAP. Yes, sir.

Mr. STEVENS. Do you meet the officials of the road?

Mr. DUNLAP. Yes, sir; when I gather up my data from the men.

Mr. STEVENS. Have you ever had any complaints from them about these pans?

Mr. DUNLAP. No, sir.

Mr. STEVENS. So there has been no complaint to you about the operation of these pans from officials of the road?

Mr. DUNLAP. No, sir.

Mr. FULLER. Have you read this House bill 19795?

Mr. DUNLAP. Yes, sir.

Mr. FULLER. In your opinion, if we struck out the words "automatic, self-dumping, and self-cleaning," in sections 1 and 2, do you think that it is a practical thing for the railroads to comply with such a law?

Mr. DUNLAP. Yes, sir; I think it is practical, and I know it is practical in our part of the country, because it is operated, and I

do not know of a road in Texas, save the St. Louis and Southwestern, which is not equipped with an ash pan of a similar nature to one that is spoken of there.

Mr. FULLER. In regard to this slope in the ash pan, Mr. Esch asked Mr. Allen a question a while ago. It is stated here that the slope was not steep enough for the ashes to run out. What has been your experience about that?

Mr. DUNLAP. The experience on our line is that the ashes do fall out, but in case they do form a clinker, or something, the fire had been shaken before the coal burned perfectly, before it had burned enough, and it had formed a clinker, in those instances it is necessary to jar the side of the pan, which will remove that instantly. I do not recall anybody ever having to get under to clean an ash pan on our line.

Mr. FULLER. If they do clog up, you can knock them down?

Mr. DUNLAP. You can always clean them from the outside by jarring the pan.

Mr. ESCH. Would not the jar of the engine be enough, ordinarily, to shake them down?

Mr. DUNLAP. Yes, sir; but we have no pans that we clean while moving, so that the ashes would compact in the bottom, and there would not be any jar there to clean the pan while we stopped. Our pans are cleaned from the outside and while we are stopped.

Mr. FULLER. Do you have a regular place to dump these pans along the road?

Mr. DUNLAP. No; we are glad to get ashes for ballast.

Mr. ESCH. There is no danger from fire on your line?

Mr. DUNLAP. No, sir; there is no danger whatever on our line from fire. Our injectors are so arranged as to run the overflow of the injector on the fire when we dump it. If there should be any fire there that would burn ties, we can wash it down before we leave it. There is a pipe connected with the injector that runs down to each one of those pans, and when you dump the pan you can prime the injector and put the fire out. You can put the fire out easily.

Mr. FULLER. You said that if these pans warp it is due to the negligence of the operator. Even if that were true, what is your experience? Do they warp very often?

Mr. DUNLAP. No, sir; it is a rare occasion that they warp; very rare. They are built of heavy material that is not easily warped.

I would like to say, in connection with those engines with the deep fire box that was spoken of, where the fire box goes down between the frame, that we have a few constructed so that the fire box goes down between the frame, and the Santa Fe has some engines of that class, and the complaint that you could not get to the side of the pan would be removed on those engines from the fact that it is necessary to put a drive wheel behind the fire box. In this instance right here [indicating picture] this fire box is over the drive wheel, but if it went down in between the frame it would be necessary to set this wheel back behind the fire box. The Santa Fe has engines of that make and we have some. But in that case the pan could be opened from the side, because the wheel is out of the way of our big fire boxes.

Mr. FULLER. Have you ever seen engines where the pan could be opened and the pan cleaned from the side?

Mr. DUNLAP. No; there are only those two classes of engines I speak of. The Santa Fe has engines that are oil burners, but on our lines those engines are hoe pans.

Mr. FULLER. Mr. Chairman, I submitted a letter from the Baldwin Locomotive Works, which explained several blueprints that accompanied the letter. It was originally sent to the Interstate Commerce Commission. At the time I did not know that blueprints could be reproduced, but if they can, I have them here, and I understand they can, and if it is the pleasure of the committee, we would be glad to have them go into the hearings as a part of our side of the case.

Mr. STEVENS. Was the letter printed?

Mr. FULLER. The letter has already been printed.

Mr. STEVENS. And you would like to have these blueprints accompany this hearing that has taken place to-day?

Mr. FULLER. Yes. We also have a photograph or two here, and if they can be inserted consistently, we would be glad to have them in.

Mr. STEVENS. If you will leave them, we will do the best we can.

Mr. FULLER. Mr. Chairman, I wanted to ask the status of this bill now.

Mr. STEVENS. It is before the committee; no special order was made.

Mr. FULLER. We are very much interested in this. We are perfectly willing to give the railroads a reasonable time within which to comply with such a law, but considering the death and injury rate which has resulted from this cause, we would like very much to get this bill on the statute books as soon as it can be gotten on there; and if Congress adjourns, there is bound to be another year's record. Last year there were 133 people killed and injured from this cause alone, and we feel that if Congress will put this bill on the statute books with reasonable time that the railroads will then start. It was testified here by a representative of the American Locomotive Works that about 40 per cent of the locomotives turned out by that company had these hopper pans. It seems to me that the railroads of this country would not be equipping 40 per cent of their locomotives with a pan that was yet in its experimental stage, and, as I have said before, while some roads are trying to honestly meet this situation, there are others who are ordering locomotives and specifying that they shall have the old pans on, and some of them doing it against the advice and desires of the locomotive builders.

Mr. STEVENS. Is that shown in the testimony?

Mr. FULLER. I have stated it; yes, I have got that information. To those roads who are honestly trying to meet this situation this can be no burden, and it seems to me that we are confronted with the same conditions we were confronted with in regard to the safety-appliance legislation. There is a certain class of operators who will not do these things, and we would like to see the bill pass as soon as possible, so that they will know that they will have to meet it. We do not present or urge this bill in any spirit of antagonism. Any time that is thought reasonable by this committee, we will acquiesce in, but we think that, as a matter of legislation, it ought to be passed at this session, and we certainly appreciate any action that can be taken by you gentlemen to that end.

Mr. ESCH. Do you know what action the Senate took on the Hemenway bill?

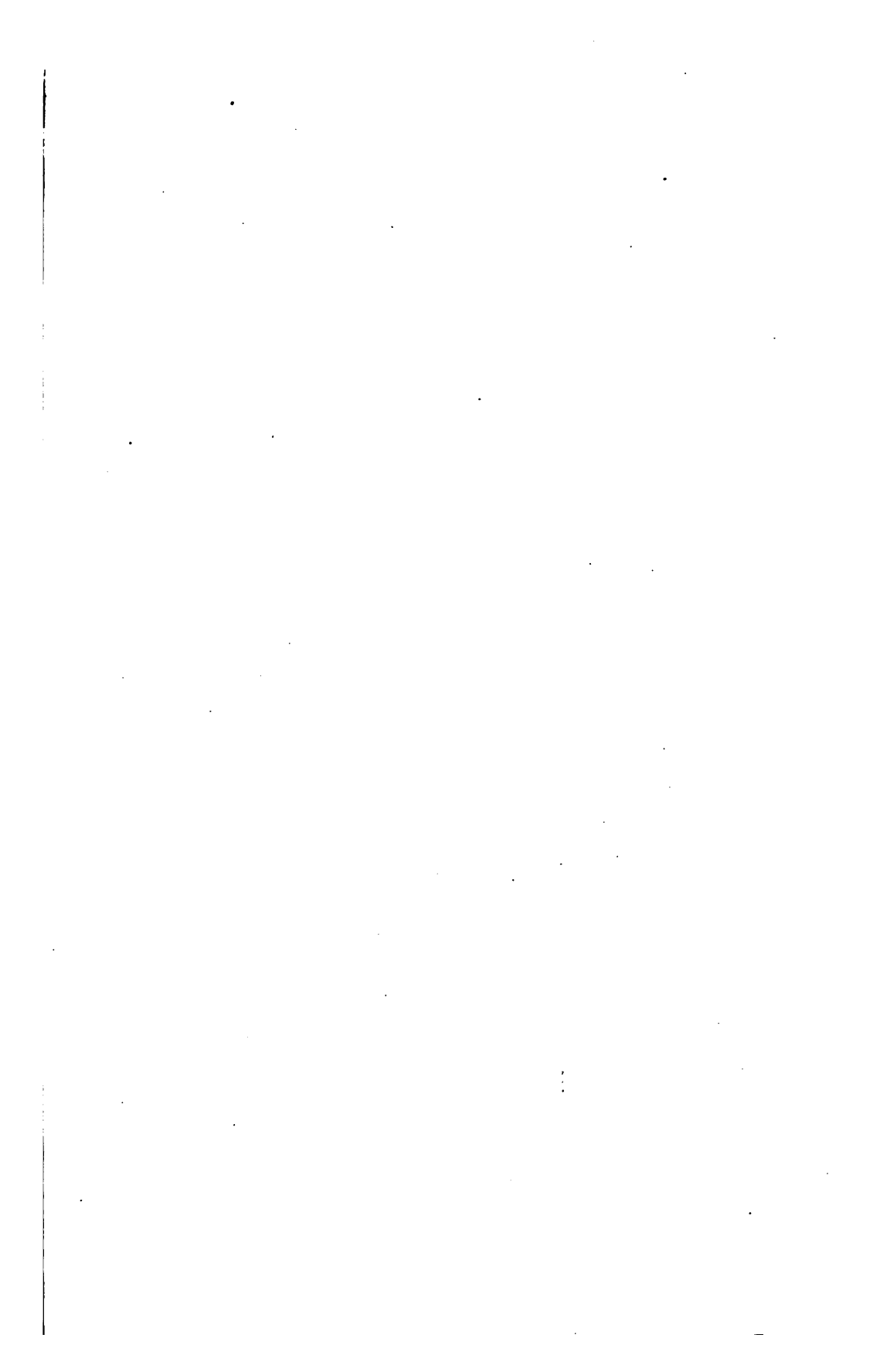
Mr. FULLER. We are to have a hearing over there on that; it is still before a subcommittee.

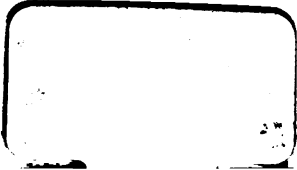
Mr. STEVENS. This committee has adjourned sine die, so that no bills of any kind can be reported at this session. We can not give you any hope now, but we will have these hearings printed, and I think I can speak for the subcommittee when I say that we will be very glad to urge, at the very first meeting next session, that as early a date as possible be fixed for the consideration of this bill. That is the best we can do now, under the order of the committee.

Mr. FULLER. We are very much obliged to you for hearing us in behalf of the bill.

(Thereupon, at 3.30 o'clock p. m., the committee adjourned.)

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